

DVP-CX860/CX870D

RMT-D123A/D123P/D124A

SERVICE MANUAL

Self Diagnosis
Supported model



Photo : DVP-CX860
RMT-D123A

*US Model
Canadian Model*

DVP-CX860/CX870D

AEP Model

UK Model

DVP-CX860

SPECIFICATIONS

CD/DVD player

Laser Semiconductor laser
Signal format system
NTSC: CX860: US,CND/CX870D
PAL (NTSC): CX860: AEP,UK

Audio characteristics

Frequency response
DVD (PCM 96 kHz): 2 Hz to 44 kHz
(± 1.0 dB)* : CX860, (± 0.5 dB) : CX870D
DVD (PCM 48 kHz): 2 Hz to 22 kHz
(± 0.5 dB)
CD: 2 Hz to 20 kHz (± 0.5 dB)
Signal-to-noise ratio
More than 110 dB: CX860
More than 115 dB: CX870D
(AUDIO OUT connectors only)
Harmonic distortion
Less than 0.003 % : CX860
Less than 0.0025 % : CX870D
Dynamic range
More than 100 dB (DVD)
More than 97 dB (CD): CX860
More than 98 dB (CD): CX870D
Wow and flutter
Less than detected value
($\pm 0.001\%$ W PEAK)

Outputs/Inputs

	Jack type	Output/input level	Load impedance
AUDIO OUT (1, 2)	Phono jacks	2 Vrms (at 50 kilohms)	Over 10 kilohms
DIGITAL OUT (OPTICAL)	Optical output connector	-18 dBm	Wave length: 660 nm
DIGITAL OUT (COAXIAL)	Phono jack	0.5 Vp-p	75 ohms terminated
VIDEO OUTPUT (1, 2) ^{*1} OUTPUT (1) ^{*2}	Phono jacks	1.0 Vp-p	75 ohms, sync negative
S VIDEO OUTPUT (1, 2) ^{*1} mini DIN OUTPUT (1) ^{*2}	4-pin mini DIN	Y: 1.0 Vp-p C: 0.286 Vp-p ^{*1} C: 0.3 Vp-p ^{*2}	75 ohms, sync negative 75 ohms terminated 75 ohms terminated
COMPONENT VIDEO OUT (Y, Pb, Pr)	Phono jacks	Y: 1.0 Vp-p Pb, Pr: 0.7 Vp-p	75 ohms, sync negative 75 ohms
S-LINK ^{*3} (CONTROL S IN)	Mini jack	-	-
WOOFER OUT ^{*3}	Phono jack	2 Vrms (at 50 kilohms)	Over 10 kilohms
5.1 CH OUTPUT ^{*4}	Phono jack	2 Vrms (at 10 kilohms)	Over 10 kilohms
MEGA CONTROL	Mini jack	-	-
AUDIO IN ^{*1} (R, L)	Phono jack	2 Vrms	47 kilohms

^{*1} CX860: US,CND/CX870D

^{*2} CX860: AEP,UK

^{*3} CX860: US,CND,AEP/CX870D

^{*4} CX870D

General

Power requirements
120 V AC, 60 Hz (CX860: US,CND/CX870D),
220 - 240 V AC, 50/60 Hz (CX860: AEP,UK),
Power consumption
18 W (CX860: US,CND),
19 W (CX860: AEP,UK), 20 W (CX870D)
Dimensions (approx.)
430 × 158 × 415 mm (17 × 6 ¹/₄ × 16 ³/₈ in.)
(w/h/d) incl. projecting parts
Mass (approx.)
7.0 kg (15 lb 7 oz)
Operating temperature
5 °C to 35 °C (41 °F to 95 °F)
Operating humidity
25 % to 80 %

Supplied accessories

- Audio/video/S-link (control S) connecting cord (1)
- S video cord (1)
- Remote commander (remote)
RMT-D123A (1)(CX860: US,CND)
RMT-D123P (1)(CX860: AEP,UK)
RMT-D124A (1)(CX870D)
- Size AA (R6) batteries (2)

^{*} The signals from AUDIO OUT connectors are measured. When you play PCM sound tracks with a 96 kHz sampling frequency, the output signals from the DIGITAL OUT (OPTICAL, COAXIAL) are converted to 48 kHz (sampling frequency).

Design and specifications are subject to change without notice.

- Abbreviation
CND: Canadian model

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As an ENERGY STAR[®] Partner, Sony Corporation has determined that this product meets the ENERGY STAR[®] guidelines for energy efficiency.



CD/DVD PLAYER

SONY[®]

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
6. Check the B+ voltage to see it is at the values specified.
7. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA TW-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

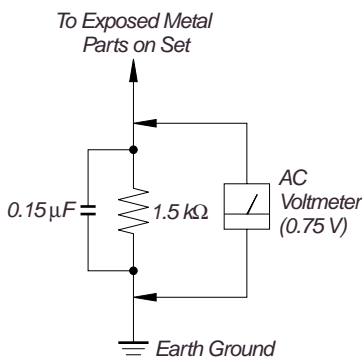


Fig. A. Using an AC voltmeter to check AC leakage.

WARNING!!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 25 cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

CAUTION:

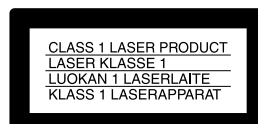
The use of optical instrument with this product will increase eye hazard.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED LINE WITH MARK \triangle ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.



ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE \triangle SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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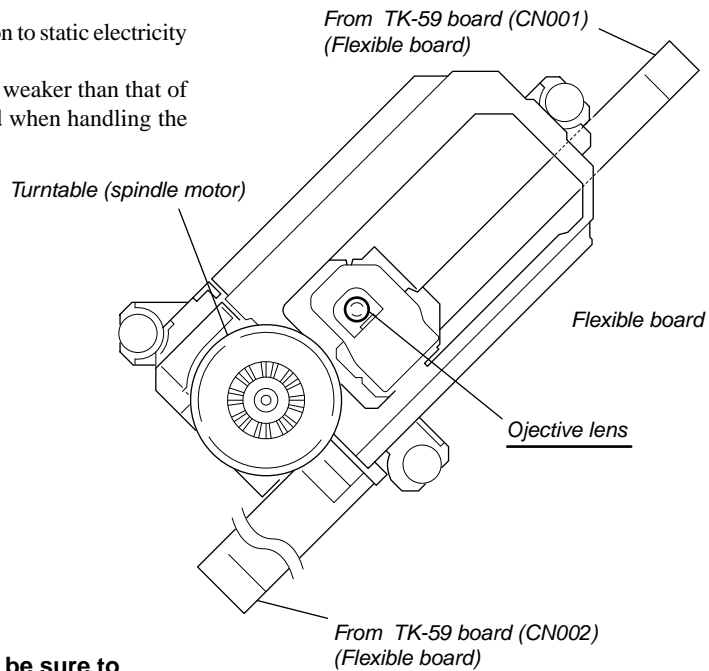
SERVICE NOTE

1. REPLACING OPTICAL PICK-UP

1-1. Handling

A red laser diode for DVD requires more attention to static electricity than general infrared laser diodes for CD.

Because its durability to static electricity is far weaker than that of infrared laser diodes, always use an earth band when handling the optical pick-up block as service parts.

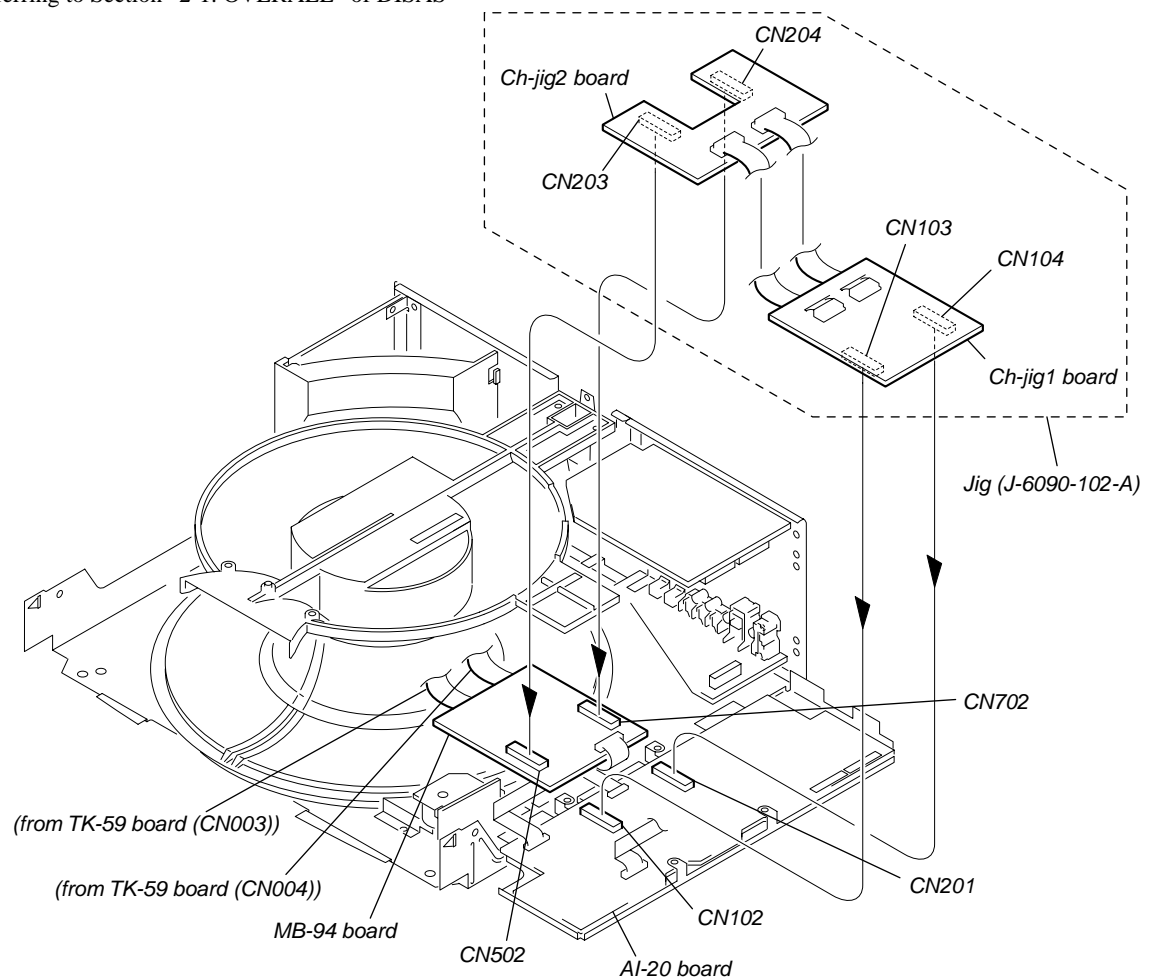


1-2. When the turntable is removed, be sure to perform the sensor adjustment.

Refer to “8. 300 CHG Mecha Con Menu 2” of Section “6. TEST MODE” (page 6-10) for the adjustment procedure.

1-3. How to service MB-94 board

Establish the equipment setup as shown in illustration using the jig (J-6090-102-A) referring to Section “2-1. OVERALL” of DISASSEMBLY.



Self-diagnosis function

When the self-diagnosis function activates to prevent the player from malfunctioning, a five-character service number (combination of a letter and digits) flashes on the screen and on the front panel display. In this case, check the following table.



First three characters	Cause and/or Corrective Action
C13	<ul style="list-style-type: none"> • The disc is dirty. Clean the disc with a cleaning cloth. (page 6) • The disc is not facing the correct direction. Place the disc in the slot so that the playing side is facing left.
C31	<ul style="list-style-type: none"> • The front cover will not open or close all the way. Remove any objects that may be blocking the movement of the front cover.
Exx (xx is any number)	<ul style="list-style-type: none"> • To prevent a malfunction, the player has performed the self-diagnosis function. The front cover automatically open and the player enters standby mode. When you contact your Sony dealer or local authorized Sony service facility, remove all of the discs in the player and give the 5-character service number. (example: E:61:10)

SECTION 1 GENERAL

This section is extracted from instruction manual. (DVP-CX860 model)

About This Manual

Conventions

- Instructions in this manual describe the controls on the player. You can also use the controls on the remote if they have the same or similar names as those on the player.
- The icons on the right are used in this manual:

Icon	Meaning
	Indicates that you can use only the remote to do the task.
	Indicates tips and hints for making the task easier.
	Indicates that the function is for DVD VIDEOs.
	Indicates that the function is for VIDEO CDs.
	Indicates that the function is for Audio CDs.

This Player Can Play the Following Discs

	DVD VIDEOs		VIDEO CDs		Audio CDs	
Disc logo						
Contents	Audio + Video		Audio + Video		Audio	
Disc size	12 cm	8 cm	12 cm	8 cm	12 cm	8 cm (CD single)
Play time	About 4 h (for single-sided DVD)/ about 8 h (for double-sided DVD)	About 80 min. (for single-sided DVD)/ about 160 min. (for double-sided DVD)	74 min.	20 min.	74 min.	20 min.

The "DVD VIDEO" logo is a trademark.

This player conforms to the NTSC color system. You cannot play discs recorded in other color systems such as PAL or SECAM.

Region code of DVDs you can play on this unit

Your DVD player has a region code printed on the back of the unit and will only play DVDs that are labeled with identical region codes.

DVDs labeled will also play on this unit.

If you try to play any other DVD, the message "Playback prohibited by area limitations." will appear on the TV screen.

Depending on the DVD, no region code indication may be labeled even though playing the DVD is prohibited by area restrictions.

Note on playback operations of DVDs and VIDEO CDs

Some playback operations of DVDs and VIDEO CDs may be intentionally fixed by software producers. Since this player plays DVDs and VIDEO CDs according to the disc contents the software producers designed, some playback features may not be available. Also refer to the instructions supplied with the DVDs or VIDEO CDs.

4

Terms for discs

- Title**
The longest section of a picture or music feature on a DVD, the movie, etc. in video software, or the name of an album in audio software.
- Chapter**
Sections of a picture or a music feature that are smaller than titles. A title is composed of several chapters. Each chapter is assigned a chapter number enabling you to locate the chapter you want. Depending on the disc, no chapters may be recorded.
- Track**
Sections of a picture or a music feature on a VIDEO CD or a CD. Each track is assigned a track number enabling you to locate the track you want.



Index (CD) / Video Index (VIDEO CD)

A number that divides a track into sections to easily locate the point you want on a VIDEO CD or a CD. Depending on the disc, no indexes may be recorded.

- Scene**
On a VIDEO CD with PBC (playback control) functions, the menu screens, moving pictures and still pictures are divided into sections called "scenes." Each scene is assigned a scene number enabling you to locate the scene you want.

Note on PBC (Playback Control) (VIDEO CDs)

This player conforms to Ver. 1.1 and Ver. 2.0 of VIDEO CD standards. You can enjoy two kinds of playback according to the disc type.

Disc type	You can
VIDEO CDs without PBC functions (Ver. 1.1 discs)	Enjoy video playback (moving pictures) as well as music.
VIDEO CDs with PBC functions (Ver. 2.0 discs)	Play interactive software using menu screens displayed on the TV screen (PBC Playback), in addition to the video playback functions of Ver. 1.1 discs. Moreover, you can play high-resolution still pictures if they are included on the disc.

Discs that the player cannot play

The player cannot play discs other than the ones listed in the table on page 4. CD-Rs, CD-RWs including PHOTO CDs, data sections in CD-EXTRA, DVD-ROMs, DVD-audio, HD (high density) layer of Super Audio CD etc., cannot be played.

When playing DTS-encoded CDs, excessive noise will be heard from the analog stereo outputs. To avoid possible damage to the audio system, the consumer should take proper precautions when the analog stereo outputs of the DVD player are connected to an amplification system. To enjoy DTS Digital SurroundTM playback, an external 5.1-channel DTS Digital SurroundTM decoder system must be connected to the digital output of the DVD player.

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

* "DTS," "DTS Digital Surround" and "DTS Digital Out" are trademarks of Digital Theater Systems, Inc.

5

Precautions

On safety

- Caution** – The use of optical instruments with this product will increase eye hazard.
- Should any solid object or liquid fall into the cabinet, unplug the player and have it checked by qualified personnel before operating it any further.

On power sources

- The player is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the player itself has been turned off.
- If you are not going to use the player for a long time, be sure to disconnect the player from the wall outlet. To disconnect the AC power cord (mains lead), grasp the plug itself; never pull the cord.
- Should the AC power cord (mains lead) need to be changed, have it done at a qualified service shop only.

On placement

- Place the player in a location with adequate ventilation to prevent heat build-up in the player.
- Do not place the player on a soft surface such as a rug that might block the ventilation holes on the bottom.
- Do not place the player in a location near heat sources, or in a place subject to direct sunlight, excessive dust or mechanical shock.

On operation

- If the player is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lenses inside the player. Should this occur, the player may not operate properly. In this case, remove the disc and leave the player turned on for about half an hour until the moisture evaporates.
- When you move the player, take out any discs. If you don't, the discs or the player may be damaged.

On adjusting volume

- Do not turn up the volume while listening to a section with very low level inputs or no audio signals. If you do, the speakers may be damaged when a peak level section is played.

On cleaning

- Clean the cabinet, panel and controls with a soft cloth slightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzine.

If you have any questions or problems concerning your player, please consult your nearest Sony dealer.

IMPORTANT NOTICE

Caution: The enclosed DVD player is capable of holding a still video image or on-screen display image on your television screen indefinitely. If you leave the still video image or on-screen display image displayed on your TV for an extended period of time you risk permanent damage to your television screen. Projection televisions are especially susceptible to this.

Notes About the Discs

On handling discs

- To keep the disc clean, handle the disc by its edge. Do not touch the surface.
- Do not stick paper or tape on the disc.
- If there is glue (or a similar substance) on the disc, remove the glue completely before using the disc.



- Do not expose the disc to direct sunlight or heat sources such as hot air ducts, or leave it in a car parked in direct sunlight as the temperature may rise considerably inside the car.
- After playing, store the disc in its case.

On cleaning

- Before playing, clean the disc with a cleaning cloth. Wipe the disc from the center out.



- Do not use solvents such as benzine, thinner, commercially available cleaners or anti-static spray intended for vinyl LPs.

On novelty discs

- Do not use irregularly shaped CDs such as heart- or star-shaped CDs as they may cause the player to malfunction.

Getting Started

This section describes how to hook up the CD/DVD player to a TV (with audio/video input jacks) and/or an AV receiver (amplifier). You cannot connect this player to a TV which does not have a video input connector. Be sure to turn off the power of each component before making the connections.

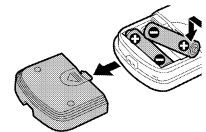
Unpacking

Check that you have the following items:

- Audio/video/S-link (control S) connecting cord (1)
- S video cord (1)
- Remote commander (remote) RMT-D123A (1)
- Size AA (R6) batteries (2)

Inserting batteries into the remote

You can control the player using the supplied remote. Insert two Size AA (R6) batteries by matching the + and - ends on the batteries to the markings inside the compartment. When using the remote, point it at the remote sensor on the player.



You can control TVs and AV receivers (amplifiers) using the supplied remote. See page 72.

Notes

- Do not leave the remote in an extremely hot or humid place.
- Do not drop any foreign object into the remote casing, particularly when replacing the batteries.
- Do not expose the remote sensor to direct sunlight or lighting apparatuses. Doing so may cause a malfunction.
- If you do not use the remote for an extended period of time, remove the batteries to avoid possible damage from battery leakage and corrosion.

Transporting the player

Before transporting the player, follow the procedure below to return the internal mechanisms to their original positions.

1 Remove all the discs from the disc slots.

Failure to remove the discs may cause damage to the player.

2 Press OPEN/CLOSE to close the front cover.

Make sure that "NO DISC" appears on the front panel display.

3 Wait for 10 seconds, then press I/O on the remote, followed by on the player.

This will safely turn off the player.

6

7

TV Hookups

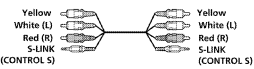
Getting Started

This connection is for listening to the sound through TV speakers (L: left, R: right). Refer to the instructions supplied with the component to be connected.

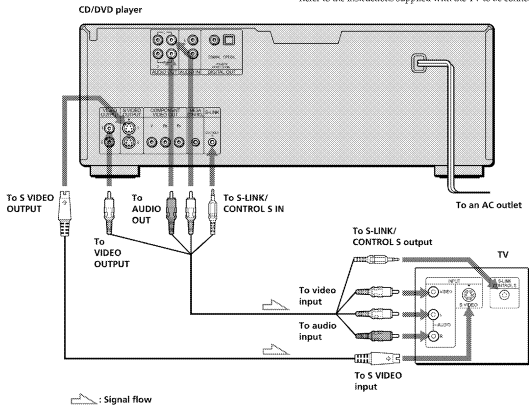
You can enjoy surround sound using your TV's built-in speakers
You can use 3D sound imaging to create virtual rear speakers from the sound of built-in TV speakers without using actual rear speakers (VES TV: Virtual Enhanced Surround TV). For details, see page 17.

Required cords

Audio/video S-link connecting cord (supplied) (1)



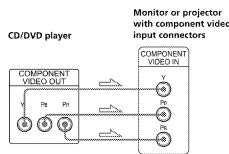
When connecting the cords, be sure to match the color-coded cord to the appropriate jacks on the components: Yellow (video) to Yellow; Red (right) to Red and White (left) to White. Be sure to make connections firmly to avoid hum and noise.
If your TV has an S-LINK (CONTROL S) connector, you can control the CD/DVD player from the TV. Connect the TV via the S-LINK (CONTROL S) IN connector.
If your TV has an S video input connector, connect the component via the S VIDEO OUTPUT connector using the supplied S video cord. You will get a better picture.
Refer to the instructions supplied with the TV to be connected.



8

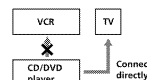
If you connect the player to a monitor or projector having component video input connectors that conform to output signals from the COMPONENT VIDEO OUT (Y, Pb, Pr) connectors on the player

Connect the component via the COMPONENT VIDEO OUT connectors using three video connecting cords (not supplied) of the same kind. You will get a better picture.



Notes

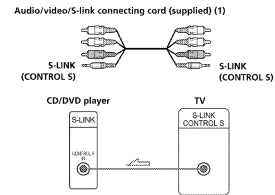
- Refer to the instructions supplied with the component to be connected.
- Do not connect this player to a video deck. If you do, noise may appear in the picture.



- Depending on the TV or receiver (amplifier), sound distortion may occur because the audio output level is high. In this case, set "AUDIO ATT" in "AUDIO SETUP" to "ON" in the setup display. For details, see page 70.

If your TV has an S-link (control S) connector

You can control the player from the TV. Connect the TV via the S-LINK (CONTROL S) IN connector using the S-link (control S) cord (supplied). Refer to the instructions supplied with the TV to be connected.



Setups for the player

Some setup adjustments are necessary for the player depending on the TV or other components to be connected.

Use the setup display to change the various settings. For details on using the setup display, see page 60.

- To connect the player to a normal TV**
In the setup display, set "TV TYPE" in "SCREEN SETUP" to "4:3 LETTER BOX" (default setting) or "4:3 PAN SCAN." For details, see page 64.
- To connect the player to a TV having the WIDE MODE function**
In the setup display, set "TV TYPE" in "SCREEN SETUP" to "16:9/4:3 WIDE MODE." For details, see page 64.
- To connect the player to a wide-screen TV**
In the setup display, set "TV TYPE" in "SCREEN SETUP" to "16:9/4:3 WIDE MODE." For details, see page 64.

Getting Started

Receiver (Amplifier) Hookups

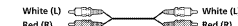
Getting Started

This connection is for listening to the sound through speakers connected to a receiver lacking a built-in DTS or Dolby® Digital decoder. Refer as well to the instructions supplied with the component to be connected.

* Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic" and the double-D symbol are trademarks of Dolby Laboratories. Confidential unpublished works. ©1992-1997 Dolby Laboratories. All rights reserved.

Required cords

Audio connecting cord (not supplied) (1)



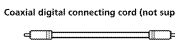
S video cord (supplied) (1)

When connecting the cords, be sure to match the color-coded cord to the appropriate jacks on the components: Red (right) to Red and White (left) to White. Be sure to make connections firmly to avoid hum and noise.

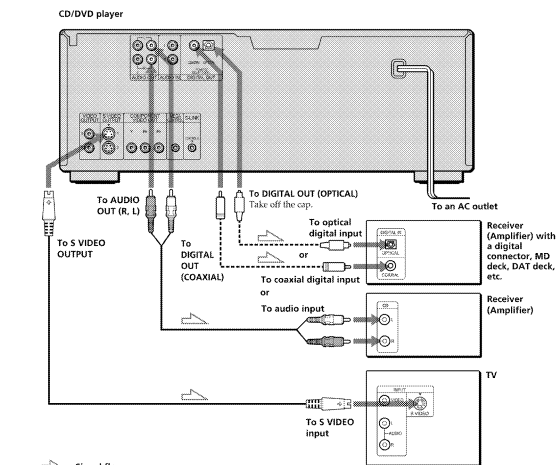
If you have a digital component such as a receiver (amplifier) with a digital connector, DAT or MD, connect the component via the DIGITAL OUT OPTICAL or COAXIAL connector using an optical or coaxial digital connecting cord (not supplied).

Optical digital connecting cord (not supplied) (1)

Coaxial digital connecting cord (not supplied) (1)



Do not connect the power cord to a switched AC outlet such as the AC outlet on a receiver (amplifier). Doing so may cause the Playback Memory, Bookmark, Disc Explorer and menu settings to be cancelled when you turn off the receiver.



10 : Signal flow

You can enjoy surround sounds even if you connect front speakers only

You can use 3D sound imaging to create virtual rear speakers from the sound of the front speakers (L, R) without using actual rear speakers (VES: Virtual Enhanced Surround). For details, see page 47.

If you have a digital component with a built-in DTS or Dolby Digital decoder
You can enjoy multichannel surround sound by connecting the component via the DIGITAL OUT OPTICAL or COAXIAL connector using an optical or coaxial digital connecting cord (supplied) instead of the S video cord. For details, see page 12.

Notes

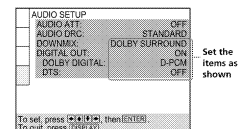
- You cannot enjoy a picture with an S video signal if your TV does not conform to the S video signal. When your TV does not have an S VIDEO input, connect the component via the VIDEO INPUT connector using the audio/video connecting cord (supplied) instead of the S video cord. For details, see page 8.
- Refer to the instructions supplied with your TV.
- You cannot make digital audio recordings of discs recorded in multichannel surround format directly using an MD deck or DAT deck.
- When you connect the component via the DIGITAL OUT OPTICAL or COAXIAL connector, set Virtual Enhanced Surround (VES) to "OFF". Otherwise, the player will not output signals from the DIGITAL OUT OPTICAL or COAXIAL connector. If you set "DOLBY DIGITAL" in "AUDIO SETUP" to "D-PCM."

When you have made the connections using an optical or coaxial digital connecting cord, do not set "DOLBY DIGITAL" to "DOLBY DIGITAL" and "DTS" to "ON." If you do, a loud noise will suddenly come out from the speakers, affecting your ears or causing the speakers to be damaged.

Setups for the player

Some setup adjustments are necessary for the player depending on the components to be connected. Use the setup display to change the various settings. For details on using the setup display, see page 60.

- To listen to the sound through speakers connected to a receiver (amplifier) which has a digital connector and lacks a built-in DTS or Dolby Digital decoder, or to output the sound to a digital component such as a DAT or MD deck**
Set the "AUDIO SETUP" items in the setup display (page 70) as shown in the illustration below. These are the default settings.



Set "VES" to "OFF" in the Control Menu display (page 47). When you select any VES mode other than "OFF," no sound will come from the speakers.

Note

When you output the signals which do not reproduce the Dolby Surround (Pro Logic) effect from the DIGITAL OUT OPTICAL or COAXIAL connector, set "DOWNMIX" to "NORMAL" in "AUDIO SETUP" in the setup display (page 70).

Getting Started

10

11

5.1 Channel Surround Hookups

Getting Started

With DVDs which contain DTS or Dolby Digital sound, you can enjoy the surround sound while producing the effect of being in a movie theater or a concert hall using a digital component with a built-in DTS or Dolby Digital decoder (not supplied). The player outputs the surround sound signals from the DIGITAL OUT OPTICAL and COAXIAL connectors.

Using a receiver (amplifier) having the OPTICAL or COAXIAL connector and 6 speakers, you can enjoy even greater real audio presence in the comfort of your own home.

Required cords

Optical digital connecting cord* (not supplied) (1)

Coaxial digital connecting cord* (not supplied) (1)

S video cord (supplied) (1)

* Connect the component via the DIGITAL OUT OPTICAL or COAXIAL connector using an optical or coaxial digital connecting cord (not supplied). You do not need to connect both of these cords. See the figure on the next page.

Notes

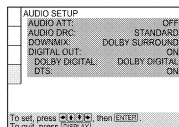
- Do not connect the power cord to an AC outlet or press the POWER switch before completing all connections.
- Refer to the instructions supplied with the component to be connected.
- The cord connectors should be fully inserted into the jacks. A loose connection may cause hum and noise.

Do not connect the power cord to a switched AC outlet such as the AC outlet on a receiver (amplifier). Doing so may cause the Playback Memory, Bookmark, Disc Explorer and menu settings to be cancelled when you turn off the receiver.

Setups for the player

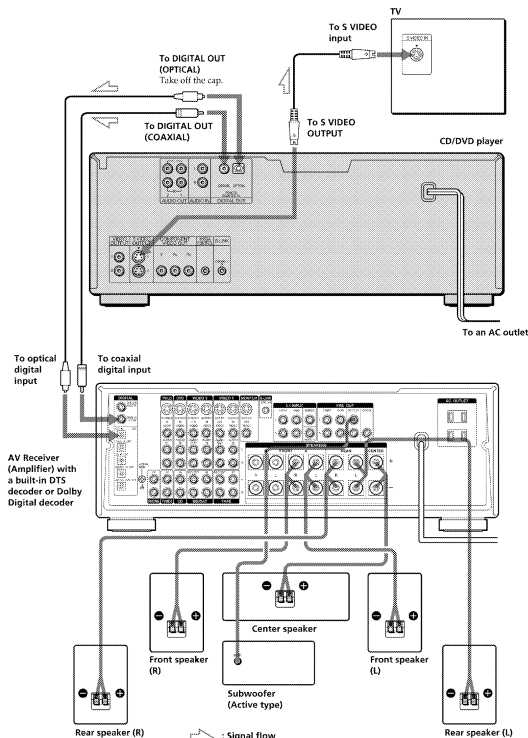
Some setup adjustments are necessary for the player depending on the components to be connected. Use the setup display to change the various settings. For details on using the setup display, see page 60.

- When you connect an audio component with a built-in Dolby Digital decoder ①
Set "DIGITAL OUT" in "AUDIO SETUP" to "ON" and then set "DOLBY DIGITAL" to "DOLBY DIGITAL" in the setup display. (page 70)
- When you connect an audio component with a built-in DTS decoder ②
Set "DIGITAL OUT" in "AUDIO SETUP" to "ON" and then set "DTS" to "ON" in the setup display. (page 70)



Notes

- When you do not connect an audio component with a built-in Dolby Digital decoder, do not set "DOLBY DIGITAL" to "DOLBY DIGITAL".
- When you do not connect an audio component with a built-in DTS decoder, do not set "DTS" to "ON."



Getting Started

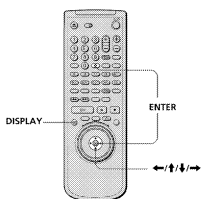
12

13

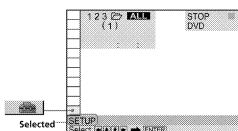
Selecting the Language for the On-Screen Display

Getting Started

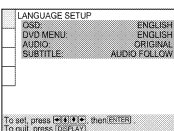
You can select the language for the setup display, the Control Menu display or the messages displayed on the screen. The default setting is "ENGLISH".



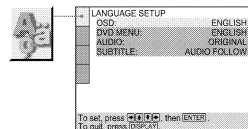
- When the player is in stop mode, press DISPLAY and select "SETUP" using \uparrow/\downarrow . The on-screen menu items are different depending on whether there is a disc in the player or not.



- Press ENTER. The setup display appears on the TV screen.



- Select "LANGUAGE SETUP" using \uparrow/\downarrow , and then press ENTER.



- Select "OSD" using \uparrow/\downarrow , then press \rightarrow or ENTER. The languages you can select are displayed.



- Select the desired language using \uparrow/\downarrow , then press ENTER.



- Press DISPLAY. The setup display disappears.

- Press DISPLAY repeatedly to turn off the on-screen menu.

- To return to the previous screen Press \rightarrow RETURN.

- To quit while making a selection Press DISPLAY.

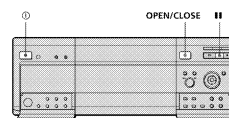
Note

The languages you can select are the ones displayed in Step 4. For details, see page 63.

Operation Sound Effects (Sound Feedback)

The player beeps when the following operations are performed. The default setting of the Sound Feedback function is set to off.

Operation	Operation sound
Power is turned on	One beep
Power is turned off	Two beeps
\rightarrow is pressed	One beep
\uparrow/\downarrow is pressed	Two beeps
Playback is stopped	One long beep
Operation is not possible	Three beeps



- Press ① on the player, then press \uparrow/\downarrow on the remote. The power indicator lights up in green.
- Press OPEN/CLOSE to open the front cover.
- Press and hold \uparrow/\downarrow on the player for more than three seconds. You will hear one beep and the Sound Feedback function is turned on.

To turn off the Sound Feedback Function
When the front cover is open, press and hold \uparrow/\downarrow on the player for more than three seconds. You will hear two beeps and the Sound Feedback function is turned off.

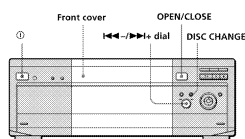
Getting Started

14

15

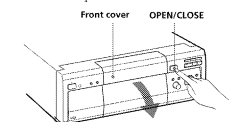
Inserting Discs

You can insert up to 301 discs into the disc slots (including the EASY PLAY slot) in this player.



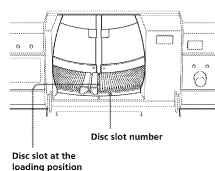
1 Press ① to turn on the player.

2 Press OPEN/CLOSE.



3 Press DISC CHANGE to turn the indicator on.

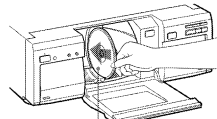
4 Turn the ④ dial until you find the disc slot where you want to insert a disc, while checking the disc slot number indicated on the front panel display or by the slot.



5 Insert a disc with the playback side facing left.

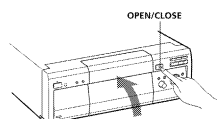
Notes

- Make sure you have inserted the disc into each slot at a right angle to the rotary table. If the disc is not put in straight, it may damage the player or the disc.
- Gently place the disc all the way into the slot and do not release the disc until it is completely seated.



6 Repeat Steps 4 and 5 to insert more discs.

7 Close the front cover by pressing OPEN/CLOSE.



The rotary table turns and the disc slot at the loading position is set to the playing position.

You can select a disc slot number by skipping by 10 slots
When you select the disc slot number in Step 4, press DISC SKIP +/- on the remote. Ten disc slots each before and after from the current disc slot number will be skipped.

Notes

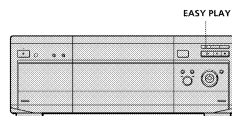
- When you insert an 8 cm (3-inch) CD, be sure to attach a Sony CD-single adaptor (not supplied) to the disc and **only use the EASY PLAY slot**. Do not insert an empty 8 cm (3-inch) CD adaptor. It may damage the player.
- Do not attach anything such as stickers or sleeves to discs. It may damage the player or the disc.
- Do not turn the turntable by hand.
- Do not reach inside of the turntable compartment. Always follow the correct steps for inserting and removing discs.
- When transporting the player, remove all discs from the player. Failure to remove the discs may cause damage to the player.

- When closing the front cover, be careful not to let anything get caught between the door and the player.
- Do not insert anything other than a DVD, Audio CD or Video CD into the player.

Using the EASY PLAY slot

The EASY PLAY slot can be used separately from other slots for the purpose of inserting a disc you want to play immediately.

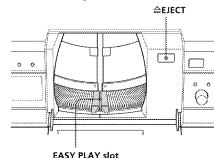
The EASY PLAY disc is numbered 301. When you use the Program Play or Disc Explorer function, or Search for a disc by slot number, enter the disc in the EASY PLAY slot as disc number 301.



To insert a disc to the EASY PLAY slot

1 Press EASY PLAY.

The EASY PLAY indicator lights up on the player and the EASY PLAY slot comes to the loading position and the front cover opens.



2 Insert the disc.

3 Press EASY PLAY again.

The front cover closes and playback of the EASY PLAY disc starts.

If you press EASY PLAY when there is a disc in the EASY PLAY slot

The player loads the disc information and starts playback of the disc.

"EZ" appears in the front panel display when the EASY PLAY slot is being used.

To remove the disc from the EASY PLAY slot

1 Press OPEN/CLOSE to open the front cover.

The front cover opens.

2 Press EASY PLAY.

The EASY PLAY indicator lights up on the player and the EASY PLAY slot comes to the loading position.

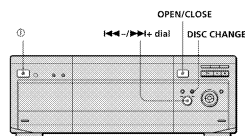
3 Press EJECT on the player.

The loading guide rises so that you can remove the disc easily.

4 Remove the disc.

Inserting Discs

Removing discs



1 Press ① to turn on the player.

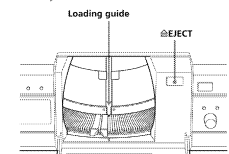
2 Press OPEN/CLOSE.

3 Press DISC CHANGE to turn the indicator on.

4 Turn the ④ dial until you find the disc slot where you want to remove, while checking the disc slot number indicated on the front panel display or by the slot.

5 Press EJECT on the player.

The loading guide rises so that you can remove the disc easily.



6 Remove the disc.

7 Repeat Steps 4 to 6 to remove other discs.

8 Close the front cover by pressing OPEN/CLOSE.

If you replace a disc in Step 6

The loading guide automatically goes down after few seconds. If you want to place another disc in the same slot, wait until the loading guide goes down before inserting the disc.

Note

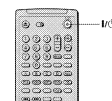
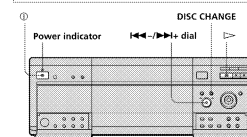
The loading guide automatically goes down when you make another operation.

Playing Discs

This chapter describes how to play a DVD/CD/VIDEO CD.

Playing Discs DVD VIDEO CD

Depending on the DVD or VIDEO CD, some operations may be different or restricted. Refer to the instructions supplied with your disc.



1 Turn on your TV

Turn on the TV and select the video input so that you can view the pictures from this player.

When using a receiver (amplifier)
Turn on the receiver (amplifier) and select the appropriate position so that you can listen to the sound from this player.

2 Press ① to place the player in standby mode.

The player enters standby mode and the power indicator lights up in red.

3 Press I/O on the remote to turn on the player
The power indicator lights up in green.

4 Press >>>

The player starts playback. Adjust the volume on the TV or the receiver (amplifier).

To change the disc

Press DISC CHANGE to turn the indicator on. Then turn the ④ dial until the desired disc number appears on the front panel display. Press the ④ dial to start playback.

Playing Discs

After following Step 4

- When playing a DVD A DVD menu or title menu may appear on the TV screen (see page 24).
- When playing a VIDEO CD Depending on the VIDEO CD, a menu may appear on the TV screen. You can play the disc interactively by following the instructions on the menu. (PBC Playback, see page 25.)

To turn on the player

Press **⏻** on the player. The player enters standby mode and the power indicator lights up in red. Then press **I/O** on the remote. The player turns on and the power indicator lights up in green. In standby mode, the player also turns on by pressing **⏻**.

To turn off the player

Press **I/O** on the remote. The player enters standby mode and the power indicator lights up in red. To disconnect the power of the player, press **⏻** on the player.

Notes on playing DTS sound tracks on a CD

- Do not play DTS sound tracks without first connecting the player to an audio component having a built-in DTS decoder. The player outputs the DTS signal via the DIGITAL OUT OPTICAL and COAXIAL connectors even if "DTS" in "AUDIO SETUP" is set to "OFF" in the setup display, and may affect your ears or cause your speakers to be damaged.
- Set the sound to "STEREO" when you play DTS sound tracks on a CD. (See "Changing the Sound" on page 43.) If you set the sound to "1/L" or "2/R," no sound will come from the DIGITAL OUT OPTICAL and COAXIAL connectors.
- If you play a CD with a DTS sound track, a loud noise may come out from the AUDIO OUT connectors, affecting your ears or causing the speakers to be damaged.

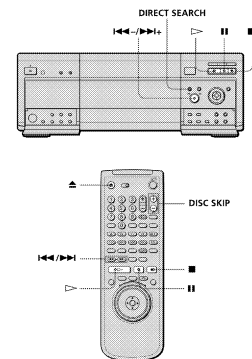
Notes on playing DTS sound tracks on a DVD

- The signals of the DTS sound tracks are output from the DIGITAL OUT OPTICAL and COAXIAL connectors only. No sound will be output from the AUDIO OUT connectors.
- If the player is connected to an audio component lacking a built-in DTS decoder, do not set "DTS" in "DIGITAL OUT" to "ON" in the setup display. Otherwise, when you play the DTS sound track, a loud noise will come out from the speakers, affecting your ears or causing the speakers to be damaged.
- When you set "DTS" in "AUDIO SETUP" to "OFF," no sound will come out from the DIGITAL OUT OPTICAL and COAXIAL connectors even if you play DTS sound tracks on DVDs.

Notes

- If you leave the player or the remote in pause or stop mode for 15 minutes, the screen saver image appears automatically. It will also appear if you play back a CD for more than 15 minutes. To make the screen saver image go away, press **⏻**. (If you want to set the screen saver function to off, see page 64.)
- While playing a disc, do not turn off the player by pressing **⏻**. Doing so may cancel the settings of the menu. When you turn off the player, press **■** first to stop playback and then press **I/O** on the remote. After the power indicator lights up in red and the player enters standby mode, press **⏻** on the player.

Additional operations

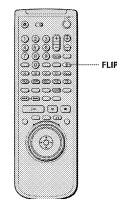
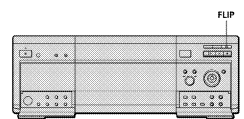


To	Operation
Select a disc	On the player: Press DISC CHANGE to turn the indicator on. Then turn the ⏮ or ⏭ dial until the desired disc number appears on the front panel display. Press the ⏮ or ⏭ dial to start playback.
Skip empty disc slots while selecting a disc	Press DISC SKIP +/- on the remote
Stop	Press ■
Pause	Press ⏸
Resume play after pause	Press ⏸ or ⏻
Go to the next chapter, track or scene in continuous play mode	On the player: Press DIRECT SEARCH to turn it on and turn the ⏮ or ⏭ dial clockwise. On the remote: Press ⏭
Go back to the preceding chapter, track or scene in continuous play mode	On the player: Press DIRECT SEARCH to turn it on and turn the ⏮ or ⏭ dial counterclockwise. On the remote: Press ⏮
Stop play and remove the disc	On the player: Press OPEN/CLOSE, followed by EJECT . On the remote: Press ⏻ , followed by EJECT on the player

You can play discs in various modes such as Program Play using the on-screen menu (Control Menu). For Control Menu operations, see page 57.

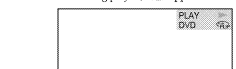
Playing Side B (FLIP) DVD

You can play side B without ejecting the disc to turn it over. "Side B" is the side facing right when you insert the disc into the slot.



While playing a disc, press FLIP.

While side B is being played, **FLIP** appears on the TV.



To return to side A Press FLIP again.

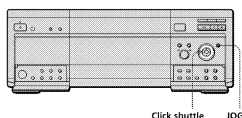
Notes

- Playback does not continue from side A to side B.
- Side B contents are not played even if you select the ALL DISCS mode.
- Program Play, Repeat Play, Bookmark, Disc Explorer, Custom Parental Control or Shuffle Play cannot be set with side B contents.
- Playback Memory settings are not effective for side B.
- When you flip the disc, Program Play, Repeat Play, and Shuffle Play settings for side A are cancelled.

Playing at Various Speeds/Frame by Frame

DVD VIDEO CD

Using the click shuttle and the JOG button/indicator, you can play back a DVD/VIDEO CD at various speeds or frame by frame. Each time you press JOG, it changes between shuttle mode and jog mode.



To change the playback speed (Shuttle mode)

Turn the click shuttle. The playback speed changes depending on the turning direction and angle as follows:

When you play back a DVD

During playback

- FF2 **⏭** Fast forward (about 30 times the normal speed)
- FF1 **⏭** Fast forward (about 10 times the normal speed)
- x2 **⏭** (about twice the normal speed)
- PLAY **▶** (normal speed)
- x2 **⏮** (about twice the normal speed)
- FR1 **⏮** Fast rewind (about 10 times the normal speed)
- FR2 **⏮** Fast rewind (about 30 times the normal speed)

If you turn the click shuttle quickly, the playback speed goes to FF2 **⏭** or FR2 **⏮** at once.

During pause

- SLOW1 **⏭** Slow (playback direction)
- SLOW2 **⏭** Slow (playback direction - slower than "SLOW1")
- PAUSE **⏸** Pause
- SLOW2 **⏮** Slow (opposite direction - slower than "SLOW1")
- SLOW1 **⏮** Slow (opposite direction)

When you play back a CD/VIDEO CD

During playback

- FF2 **⏭** Fast forward (faster than "FF1")
- FF1 **⏭** Fast forward
- x2 **⏭** (about twice the normal speed)
- PLAY **▶** (normal speed)
- FR1 **⏮** Fast rewind
- FR2 **⏮** Fast rewind (faster than "FR1")

* CD Only

If you turn the click shuttle quickly, the playback speed goes to FF2 **⏭** or FR2 **⏮** at once.

During pause (VIDEO CD only)

- SLOW1 **⏭** Slow (playback direction)
- SLOW2 **⏭** Slow (playback direction - slower than "SLOW1")
- PAUSE **⏸** Pause

To return to continuous play

Press **⏻**.

Note Depending on the DVD/VIDEO CD, you may not be able to do some of the operations described.

To play the disc frame by frame (Jog mode) DVD VIDEO CD

1 Press JOG.

JOG lights up during jog mode. When you press JOG on the player, it pauses.

2 Turn the click shuttle.

Depending on the turning speed, playback goes to frame-by-frame playback in the direction that the click shuttle is turned. If you turn the click shuttle at a constant speed for a while, the playback speed goes to slow or normal.

To return to Continuous Play

Press **⏻**.

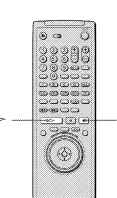
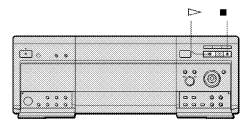
Notes

- The JOG indicator shows the mode of the corresponding click shuttle. For example, when the JOG indicator on the remote is not lit, the remote click shuttle will remain in the shuttle mode even if the indicator on the player is lit.
- If you don't operate the click shuttle for about 20 seconds after pressing JOG, it returns to shuttle mode. On the player, it stays in jog mode.

Resuming Playback from the Point Where You Stopped the Disc (Resume Play) DVD VIDEO CD

DVD VIDEO CD

The player remembers the point where you stopped the disc, and when "RESUME" appears on the front panel display, you can resume playback from that point. Resume Play will work even if the player enters standby mode by pressing **I/O** on the remote.



1 While playing a disc, press **■** to stop playback.

"RESUME" appears on the front panel display and "Disc will restart from current point. To start from beginning, press [STOP] again." appears on the TV screen. If "RESUME" does not appear, Resume Play is not available.

2 Press **⏻**.

The player starts playback from the point where you stopped the disc in Step 1.

To play from the beginning of the disc

When the playing time appears on the front panel display before you start playing, press **■** to reset the playing time, then press **⏻**.

Resuming Playback from the Point Where You Stopped the Disc (Resume Play)

Notes

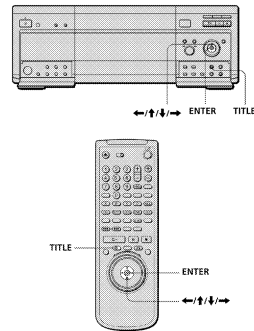
- Resume Play may not be available on some DVDs.
- Resume Play is not available in Shuffle or Program Play mode.
- Depending on where you stopped the disc, the player may resume playback from a different point.
- The point where you stopped playing is cleared when:
 - you open the front cover
 - you turn the power off by pressing **ENTER** on the player
 - you change the play mode
 - you start playback after selecting a disc, title, chapter or track
 - you change the settings in the setup display
 - you load disc information by pressing **LOAD**
 - you press MEGA CONTROL (MEGA) on the remote
 - you use the DISC EXPLORER function

Using the DVD's Menu

Some DVDs have a title menu or a DVD menu that is provided with DVDs only.

Using the title menu

A DVD is divided into long sections of a picture or a music feature called "titles." When you play a DVD which contains several titles, you can select the title you want using the title menu.



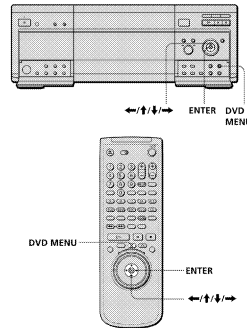
- Press TITLE.**
The title menu appears on the TV screen. The contents of the menu vary from disc to disc.
- Press \leftarrow/\rightarrow to select the title you want to play.**
Depending on the disc, you can use the number buttons to select the title.
- Press ENTER.**
The player starts playing the selected title.

Notes

- On some DVDs, you may not be able to select the title.
- On some DVDs, a "title menu" may simply be called a "menu" or "title" in the instructions supplied with the disc. "Press ENTER" may also be expressed as "Press SELECT."

Using the DVD menu

Some DVDs allow you to select the disc contents using a menu. When you play these DVDs, you can select the language for the subtitles, the language for the sound, etc., using the DVD menu.



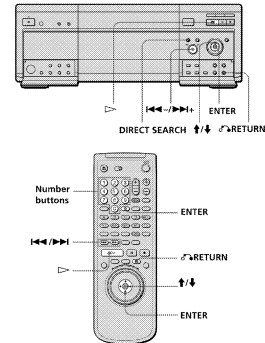
- Press DVD MENU.**
The DVD menu appears on the TV screen. The contents of the menu vary from disc to disc.
- Press \leftarrow/\rightarrow to select the item you want to change.**
Depending on the disc, you can use the number buttons to select the item.
- To change other items, repeat Step 2.**
- Press ENTER.**

If you want to select the language for the DVD menu
Change the setting using "DVD MENU" in "LANGUAGE SETUP" in the setup display. For details, see page 63.

Note
Depending on the DVD, a "DVD menu" may simply be called a "menu" in the instructions supplied with the disc.

Playing VIDEO CDs with PBC Functions (PBC Playback)

When playing VIDEO CDs with PBC (Play Back Control) functions (Ver. 2.0 discs), you can enjoy simple interactive operations, search functions, and other such operations. PBC Playback allows you to play VIDEO CDs interactively by following the menu on the TV screen. On this player, you can use the number buttons, ENTER, \leftarrow/\rightarrow , \uparrow/\downarrow , and **RETURN** during PBC Playback. When you use the \leftarrow/\rightarrow dial on the player, press **DIRECT SEARCH** to turn it on.



- Start playing a VIDEO CD with PBC functions by following Steps 1 to 4 in "Playing Discs" on page 19.**
- Select the item number you want.**
Press \uparrow/\downarrow to select the item number. You can also select the item number with the number buttons on the remote.
- Press ENTER.**

Playing VIDEO CDs with PBC Functions (PBC Playback)

4 Follow the instructions in the menu for interactive operations.

Refer to the instructions supplied with the disc, as the operating procedure may differ according to the VIDEO CD.

To go back to the menu

Press **RETURN**, \leftarrow/\rightarrow , or \uparrow/\downarrow .
To cancel PBC playback of a VIDEO CD with PBC functions and play the disc in continuous play mode, there are two ways.

- Before you start playing, select the track you want using \leftarrow/\rightarrow or \uparrow/\downarrow , then press **ENTER** or \rightarrow .
- Before you start playing, select the track number using the number buttons on the remote, then press **ENTER** or \rightarrow . "Play without PBC" appears on the TV screen and the player starts continuous play. You cannot play still pictures such as a menu.

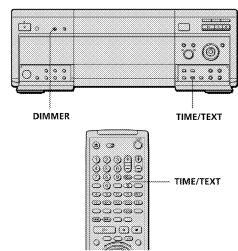
To return to PBC playback, press **ENTER** twice then press \rightarrow .

Note

Depending on the VIDEO CD, "Press ENTER" in Step 3 may be expressed as "Press SELECT" in the instructions supplied with the disc. In this case, press \rightarrow .

Using the Front Panel Display

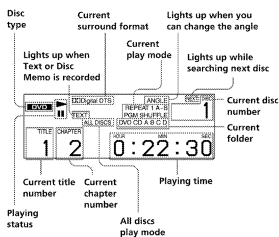
You can check information about the disc, such as the total number of titles or tracks or remaining time, using the front panel display.



To change the brightness of the front panel display
Press **DIMMER** on the player. Each time you press the button, the front panel display and indicators on the player become dark, off, or bright in sequence. The power indicator is not turned off by pressing **DIMMER** however. You can change the brightness also using the setup display (page 65).

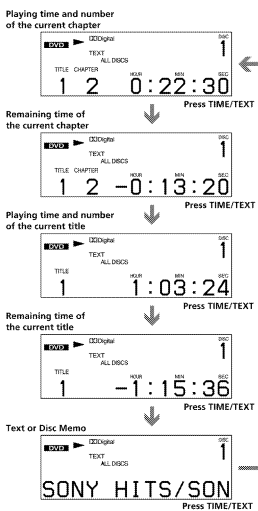
When playing back a DVD

Displaying information while playing the disc



Checking the remaining time

Press **TIME/TEXT**.
Each time you press **TIME/TEXT** while playing the disc, the display changes as shown in the following chart.

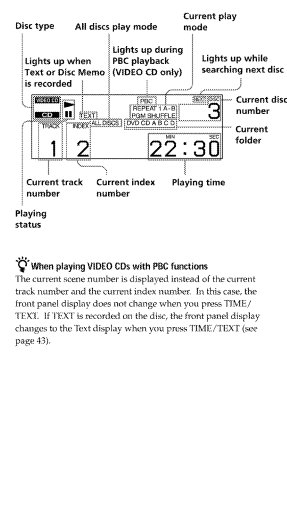


Notes

- On some DVDs, the chapter number or time may not appear or you may not be able to change the front panel display.
- While you are doing Shuffle Play or Program Play, the playing time of the title and the remaining time of the title are not displayed.

When playing back a CD/VIDEO CD

Press **TIME/TEXT**.
Each time you press **TIME/TEXT** while playing the disc, the display changes as shown in the following chart.



Notes

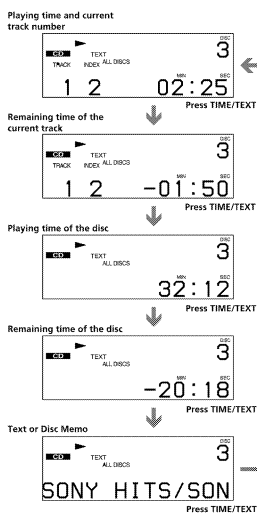
- When playing VIDEO CDs with PBC functions
The current scene number is displayed instead of the current track number and the current index number. In this case, the front panel display does not change when you press **TIME/TEXT**. If **TEXT** is recorded on the disc, the front panel display changes to the Text display when you press **TIME/TEXT** (see page 43).

Using the Front Panel Display

Checking the remaining time

Press TIME/TEXT.

Each time you press TIME/TEXT while playing a disc, the display changes as shown in the following chart.



Note

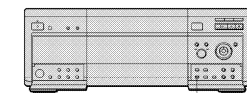
While you are doing Shuffle Play, or Program Play, the playing time of the disc and the remaining time of the disc are not displayed.

Displaying the Disc Information (Disc Explorer)

DVD VIDEO CD

You can check the contents of each disc loaded into the player.

Loading the disc information



Set the TV/DISC EXPLORER/DVD switch to DISC EXPLORER.



On the player: Press LOAD when the player is in stop or standby mode.

On the remote: 1 Set the TV/DISC EXPLORER/DVD switch to DISC EXPLORER.

2 Press LOAD when the player is in stop or standby mode.

The player reads the disc information of all the discs and loads it into memory so that the disc type, titles and other text information can be displayed.

To cancel loading

Press ■.

The player can load the disc information even when the power is in standby mode.

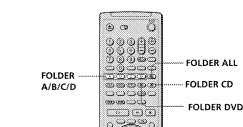
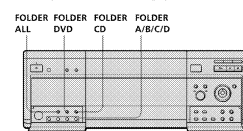
Press LOAD before turning on the player. The player reads and loads all the disc information. After loading is complete, the player returns to the standby mode.

Displaying the information of the loaded discs

You can look at the loaded disc information on the Disc Explorer, and also select the disc to be played on the Disc Explorer.

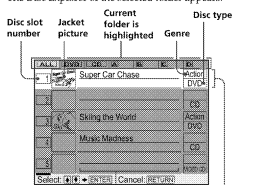
The player has 7 folders (ALL, DVD, CD, A to D) and can display the Disc Explorer of each folder.

All the discs in the player are filed in the "ALL" folder. At the same time, DVDs are automatically filed in the "DVD" folder, and CDs and VIDEO CDs are in the "CD" folder. You can file your discs as you like in the A to D folders. See "Filing Discs in the Folder" (page 30).



Press the folder button (FOLDER/ALL/DVD/CD/A/B/C/D) of the desired folder in stop mode.

The Disc Explorer of the selected folder appears.



Text information (DVD TEXT, CD TEXT, Disc Memo)

Jacket picture

The jacket picture recorded on the disc appears automatically. If the jacket picture is not recorded, the genre picture recorded in the memory of the player is displayed when you select the genre.

Text information (DVD TEXT, CD TEXT or Disc Memo)

The text information (DVD TEXT or CD TEXT) recorded on the disc appears automatically. If no text information is recorded, you can store the text information (Disc Memo) yourself (page 32).

Genre

You can select the genre of the disc yourself (page 34).

Disc type

The disc type appears automatically. "??" appears when the player has not loaded the disc information in the memory. If the selected slot does not contain a disc, the text information row is blank.

Selecting the disc on the Disc Explorer

- 1 Select the folder using the FOLDER buttons. The Disc Explorer of the selected folder appears.
- 2 Select the disc by one of the following operations.
 - pressing ↑/↓
 - pressing the number buttons and ENTER
 - pressing DISC CHANGE to turn the indicator on, followed by turning the ◀/▶ dial and then pressing it
 - pressing DISC SKIP +/- on the remote
- 3 Press ENTER.

The Disc Explorer disappears and playback starts.

To cancel using the Disc Explorer

Press ◀/RETURN.

Displaying the Disc Information (Disc Explorer)

Notes

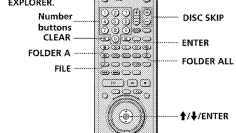
- If you press a FOLDER button during playback, the playback stops and the Disc Explorer appears. In this case, the Resume Play is not available.
- Even if you have removed the disc from the player, the disc information of the disc remains on the Disc Explorer until you load the disc information again by pressing LOAD or place a new disc in the same slot and play it.
- If you have inserted a disc whose disc information has not been loaded yet, you cannot select and play the disc on the Disc Explorer. The player skips the disc whose disc information differs from the loaded disc information, and plays the next loaded disc.
- If you load or try to play an empty slot, it appears as a blank in the Disc Explorer. You cannot select this.
- Even if the disc has a jacket picture recorded on it, the jacket picture may not appear on the Disc Explorer.
- Do not turn off the player by pressing ⏻. Doing so may cancel the settings. When you turn off the player, press ■ first to stop playback and then press I/O on the remote. After the power indicator lights up in red and the player enters standby mode, press ⏻ on the player.

Filing Discs in the Folder (Disc Explorer - File Mode)

DVD VIDEO CD

You can file your discs as you like in four individual folders, A to D. Even if you file discs from Folder ALL, DVD or CD to Folder A to D, those discs are not deleted from Folder ALL, DVD or CD. You can file up to 301 discs in one folder, and the same disc in different folders. If you file your favorite discs in a folder (A to D), you can play only those discs, or set Program Play, Shuffle Play and Repeat Play for the discs within the folder.

Set the TV/DISC EXPLORER/DVD switch to DISC EXPLORER.

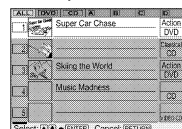


For example, to file DVDs in the no. 1 and no. 3 slots to Folder A

1 Press FOLDER ALL.

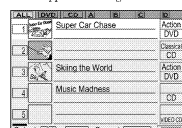
The Disc Explorer of Folder ALL appears.

You can also press FOLDER DVD to select a DVD.



2 Press FILE to enter the file mode.

"FILE" appears at the right bottom corner.

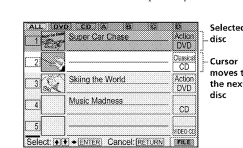


3 Select the disc using the number buttons, then press ENTER.

You can also use ↑/↓, DISC SKIP +/- on the remote. Or, you can press the DISC CHANGE button followed by turning and pressing the ◀/▶ dial.

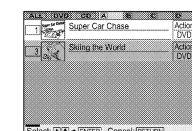
4 Press ENTER.

To file more than one disc repeat Steps 3 and 4.



5 Press FOLDER A.

"FILE" disappears from the Disc Explorer. Then the Disc Explorer for Folder A containing the selected discs appears.



To cancel the file mode

Press ◀/RETURN. "FILE" disappears from the Disc Explorer.

You can sort the discs by genre or text information

The discs are listed first by slot number in the Disc Explorer. You can then sort the discs by desired genre or text and store them (page 35).

Note

Do not turn off the player by pressing ⏻. Doing so may cancel the settings. When you turn off the player, press ■ first to stop playback and then press I/O on the remote. After the power indicator lights up in red and the player enters standby mode, press ⏻ on the player.

Deleting discs from a folder

You can delete unnecessary discs from Folder A to D. You cannot delete discs from Folder ALL, DVD or CD unless you remove the disc from the player.

1 Press the FOLDER (A/B/C/D) button of the disc you want to delete.

The Disc Explorer of the selected folder appears.

2 Press FILE to enter the file mode.

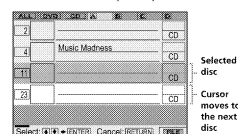
"FILE" appears at the right bottom corner.

3 Select the disc using the number buttons, then press ENTER.

You can also use ↑/↓, DISC SKIP +/- on the remote. Or, you can press the DISC CHANGE button followed by turning and pressing the ◀/▶ dial.

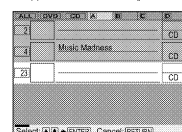
4 Press ENTER.

To delete other discs, repeat Steps 3 and 4.



5 Press CLEAR.

The disc disappears from the folder. "FILE" disappears from the Disc Explorer.



To cancel the file mode

Press ◀/RETURN. "FILE" disappears from the Disc Explorer.

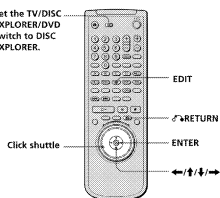
Labeling Discs and Folders (Disc Explorer - Edit Mode)



You can label the disc with a personal title of 16 characters (Disc Memo) when DVD TEXT or CD TEXT is not recorded on the disc, and the folders A through D with a title of 3 characters.

The Disc Memo can be anything you like, such as a title, musician's name, category or date of purchase. You can also assign a genre label to the disc. This will help you keep your discs organized.

Set the TV/DISC EXPLORER/DVD switch to DISC EXPLORER.



Labeling a disc or folder

- 1 Select the disc or folder you want to label.

To label a disc

Select the disc on the Disc Explorer, then press EDIT to enter the edit mode. The selected disc's text only is highlighted and "EDIT" appears at the right bottom corner.

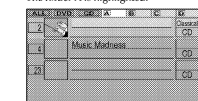


To label a folder

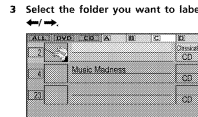
- 1 Press EDIT to enter the edit mode.

- 2 Press \uparrow .

The folder A is highlighted.



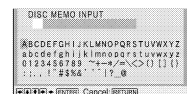
- 3 Select the folder you want to label by pressing \leftarrow/\rightarrow .



- 2 Press ENTER.

The DISC MEMO INPUT display appears when you have selected a disc.

The FOLDER NAME INPUT display appears when you have selected a folder.



- 3 Select a character by pressing $\leftarrow/\rightarrow/\uparrow/\downarrow$ or by turning the click shuttle.

The selected character changes color.



- 4 Press ENTER.

- 5 Repeat Steps 3 and 4 to input other characters.



- 6 When you have entered all the characters for the Disc Memo or folder name, press EDIT.

The DISC MEMO INPUT display or the FOLDER NAME INPUT display disappears and the Disc Memo or folder name is stored.



To cancel the edit mode

Press \leftarrow RETURN. "EDIT" disappears from the Disc Explorer.

To correct the characters

You can correct the characters using the \leftarrow/\rightarrow dial on the player or \leftarrow/\rightarrow on the remote. To use the \leftarrow/\rightarrow dial, press DIRECT SEARCH to turn it on.

- To erase the characters:

- 1 Move the cursor to the character you want to erase by pressing \leftarrow or \rightarrow or by turning the \leftarrow/\rightarrow dial.

- 2 Press CLEAR.

- To insert or overwrite the characters:

- 1 Move the cursor to the character you want to correct by pressing \leftarrow or \rightarrow .
- 2 Select the correct character by pressing $\leftarrow/\rightarrow/\uparrow/\downarrow$ or by turning the click shuttle.

- 3 To insert the character, press ENTER.

To overwrite, don't press ENTER but move the cursor by pressing \leftarrow/\rightarrow or by turning the \leftarrow/\rightarrow dial clockwise.

Notes

- Do not turn off the player by pressing \odot . Doing so may cancel the settings. When you turn off the player, press \blacksquare first to stop playback and then press \odot on the remote. After the power indicator lights up in red and the player enters standby mode, press \odot on the player.
- You can label up to 301 discs. When you have the player store a new disc in memory, the data for the old disc is erased.
- Even if you have removed the disc from the player, the disc information of the disc remains on the Disc Explorer until you load the disc information again by pressing LOAD or place a new disc in the same slot and play it.

Playing Discs

32

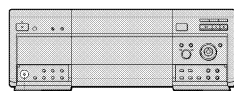
33

Labeling Discs (Disc Memo) and Folders

Labeling the disc or folder using a keyboard

To label the disc or folder, you can use an IBM compatible PC keyboard of the USA model* (not supplied) on the DISC MEMO INPUT or FOLDER NAME INPUT display.

* Power consumption must be 120 mA or less.



KEYBOARD jack

- 1 Connect a keyboard to the KEYBOARD jack on the front panel when the power of the player is not on.
- 2 Turn on the player
- 3 Do Steps 1 and 2 of "Labeling a disc or folder" to display the DISC MEMO INPUT or FOLDER NAME INPUT display.
- 4 Input the characters on the keyboard
- 5 Press ENTER on the keyboard to store the Disc Memo or folder name. The DISC MEMO INPUT display or the FOLDER NAME INPUT display disappears and the Disc Memo or folder name is stored.

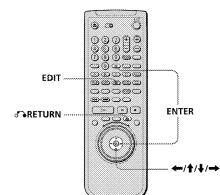
Notes

- If the cursor keys do not work correctly and you cannot complete the task using the keyboard, disconnect the keyboard, then reconnect it to the player and try again.
- If the keyboard is not the USA model, the characters may be input differently from those on the keys. The USA keyboard layout is shown below.



Selecting a genre

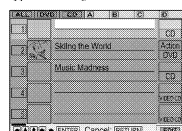
You can assign a genre to your disc.



- 1 Select the disc on the Disc Explorer using \uparrow/\downarrow .

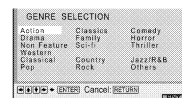
- 2 Press EDIT to enter the edit mode.

The selected disc's text only is highlighted and "EDIT" appears at the right bottom corner.



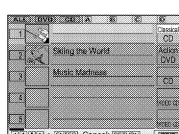
- 3 Press \rightarrow , then ENTER.

The GENRE SELECTION display appears.

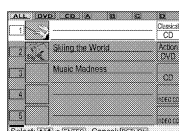


- 4 Select the genre using $\leftarrow/\rightarrow/\uparrow/\downarrow$, then press ENTER.

The genre for the selected disc is stored in memory. If no jacket picture is recorded in the disc, the genre picture in the memory of the player is displayed.



- 5 Press \leftarrow RETURN to return to the original Disc Explorer display



To cancel the edit mode

Press \leftarrow RETURN. "EDIT" disappears from the Disc Explorer.

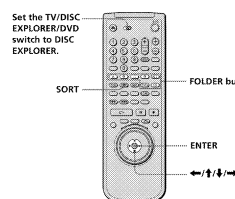
Sorting Discs (Disc Explorer - Sort Mode)



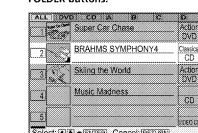
You can sort the discs in the folder by disc slot number, text information (DVD TEXT/CD TEXT/Disc Memo) or genre.

The text information is sorted alphabetically. In case of the genre, the selected genre comes first.

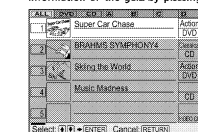
Set the TV/DISC EXPLORER/DVD switch to DISC EXPLORER.



- 1 Select the folder you want to sort using the FOLDER buttons.



- 2 If you want to sort by text information or genre select the disc which has the desired text information or the genre by pressing \uparrow/\downarrow .



Playing Discs

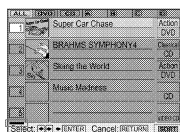
34

35

Sorting Discs (Disc Explorer - Sort Mode)

3 Press SORT to enter the sort mode.

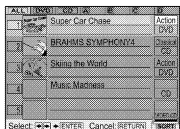
The selected disc only is highlighted and "SORT" appears at the right bottom corner.



Sorting item indicator (green)

4 Select the item you want to sort by pressing ←/→.

You can select the disc number, text information or genre. The sorting item indicator moves to the selected item.



Sorting item indicator position when you sort by genre

5 Press ENTER.

The discs are sorted and re-displayed. The sorted order remains even if the power of the player is turned off.



6 The disc order in the same genre

The discs in the same genre are sorted by numerical order of the disc slot number.

Note

Do not turn off the player by pressing 0. Doing so may cancel the settings. When you turn off the player, press 1 first to stop playback and then press 1/0 on the remote. After the power indicator lights up in red and the player enters standby mode, press 0 on the player.

To cancel the sort mode

Press 2/RETURN. "SORT" disappears from the Disc Explorer.

Using Various Functions with the Control Menu

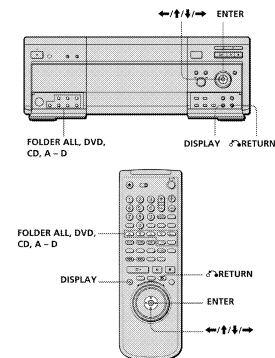
This chapter describes how to play discs in various modes and how to use the convenient features of the on-screen menu (Control Menu).

Using the Control Menu Display DVD CD

Using the Control Menu display, you can select the starting point, play scenes in any order you like, change the viewing angles, make Digital Cinema Sound settings, and other such operations.

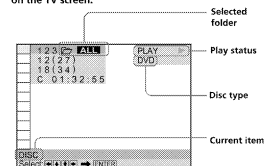
The possible operations are different depending on the kind of disc.

For details on each Control Menu display item, see pages 39 to 59.



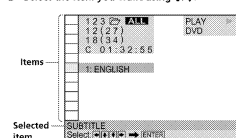
1 Select the desired folder.

2 Press DISPLAY to show the Control Menu display on the TV screen.



Using the Control Menu Display

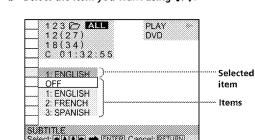
3 Select the item you want using ↑/↓.



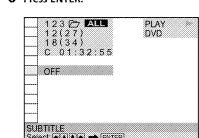
4 Press ENTER.



5 Select the item you want using ↑/↓.



6 Press ENTER.

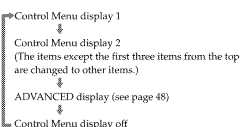


To cancel while making a selection

Press 2/RETURN.

To display other items

Each time you press DISPLAY, the Control Menu display changes as follows:



The Control Menu display items are different depending on the disc.

You can select some items directly

Some items can be selected by pressing the corresponding button on the remote or on the player. In this case, only the item you selected is displayed. For instructions on using the buttons, see the pages of each relevant item. For a list of available buttons on the player and remote, see pages 83 to 86.

Note

Some Control Menu display items require operations other than selecting the setting. For details on these items, see the relevant pages.

Control Menu Item List

DISC (page 40)

Select a mode to enjoy multichannel surround sound such as Dolby Digital.

**TITLE (DVD only) (page 40)/
SCENE (VIDEO CD during PBC playback only) (page 40)/
TRACK (VIDEO CD only) (page 40)**

**CHAPTER (DVD only) (page 40)/
INDEX (VIDEO CD only) (page 40)**

TRACK (CD only) (page 40)

INDEX (CD only) (page 40)

You can select a disc or search for a point on the disc by selecting the title, chapter, track, index or scene.

TIME/MEMO (pages 41, 42, 43)

TIME/TEXT (pages 41, 42, 43)

You can check the playing time and remaining time of the current title, chapter, track and the total playing time or remaining time of the disc.

You can also search for a scene by inputting the time code.

You can check the DVD TEXT or CD TEXT of the disc on the TV screen and the front panel display.

AUDIO (page 43)

If the DVD is recorded with multilingual tracks, you can select the language you want while playing the DVD.

If the DVD is recorded in multiple audio formats (PCM, Dolby Digital or DTS), you can select the audio format you want while playing the DVD.

With CDs or VIDEO CDs, you can select the sound from the right or left channel and listen to the sound of the selected channel through both the right and left speakers.

SUBTITLE (DVD only) (page 45)

With DVDs on which multilingual subtitles are recorded, you can change the subtitle language whenever you want while playing the DVD, and turn it on or off whenever you want.

ANGLE (DVD only) (page 46)

With DVDs on which various angles (multi-angles) are recorded, you can change the angle of the scene.

VES (DVD only) (page 47)

Select a mode to enjoy multichannel surround sound such as Dolby Digital.

Even if you connect only TV or front speakers, Virtual Enhanced Surround (VES) lets you enjoy 3D sound by using 3D sound imaging to create virtual rear speakers from the sound of the front speakers (L, R) without using actual rear speakers.

ADVANCED (DVD only) (page 48)

You can check play information about the bit rate or the position where the disc is being played (layer).

CUSTOM PARENTAL CONTROL (page 49)

Using a registered password, you can set playback restrictions for a desired disc.

The same password is used for both Parental Control (page 66) and Custom Parental Control.

SETUP (page 60)

Using the setup display, you can do the initial setup, adjust the picture and sound and set the various outputs.

You can also set a language for the subtitles and the setup display, limit playback by children, and so on. For details about the setup display, see page 60.

1/ALL DISCS (page 51)

You can have the player play one or all of the discs in the selected folder. You can switch between one disc mode or all disc mode in the Program Play, Shuffle Play and Repeat Play modes.

PROGRAM (page 52)

You can play the contents of the disc(s) in the order you want by arranging the order of the titles, chapters or tracks on the disc(s) to create your own program.

SHUFFLE (page 54)

You can have the player "shuffle" titles, chapters or tracks and play them in a random order. Subsequent "shuffling" may produce a different playing order.

REPEAT (page 55)

You can play all of the titles/tracks on a disc or all of the discs, or a single title/chapter/track repeatedly.

Control Menu Item List

1 **A-B REPEAT** (page 56)

You can play a specific portion of a title, chapter, or track repeatedly.

2 **VIEWER (DVD, VIDEO CD only)** (page 57)

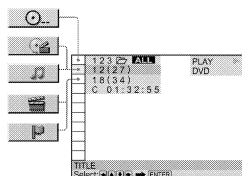
You can divide the screen into 9 sections (quick reference screen) and quickly search for a scene or a bookmark.

Searching for a Disc/Title/Chapter/Track/Index/Scene



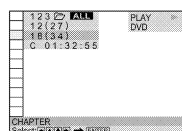
You can select a disc, or search the disc by title, chapter, track, index or scene.

Select "DISC," "TITLE," "CHAPTER," "TRACK," "INDEX" or "SCENE" after pressing DISPLAY. When you play back a DVD, "TITLE" and "CHAPTER" are displayed. When you play back a VIDEO CD/CD, "TRACK" and "INDEX" are displayed. When you play back a VIDEO CD with PBC functions, "SCENE" is displayed.



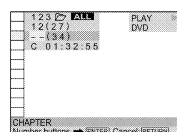
1 Select "DISC," "TITLE," "CHAPTER," "TRACK," "INDEX" or "SCENE" using \uparrow/\downarrow .

"**(*)*" is highlighted (** refers to a number). The number in parentheses indicates the total number of titles, chapters, tracks, indexes or scenes.



2 Press \Rightarrow or ENTER.

"**(*)*)" changes to "— (*)".



3 Select the number of the disc, title, chapter, track, index or scene you want to search for using the number buttons, then press ENTER.

The player starts playback at the selected number. To cancel the number, press CLEAR before pressing ENTER.

To cancel while making a selection Press \Rightarrow RETURN.

Notes

- The title, chapter or track number displayed is the same number recorded on the disc.
- The index numbers are not displayed during PBC playback of VIDEO CDs.
- If you cannot search the desired disc in Step 3, the disc is not included in the current folder. To search the desired disc from all the discs in the player, press FOLDER ALL to select the ALL folder.

You can search for a title, chapter, or track using the VIEWER. See "Scanning the title, chapter, or track" on page 58 for more information about using the VIEWER.

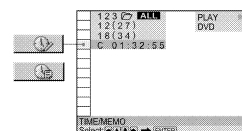
Checking the Playing Time and Remaining Time



You can check the playing time and remaining time of the current title, chapter or track and the total playing time or remaining time of the disc.

Press DISPLAY. Then press TIME/TEXT to change the time information.

You can also check the DVD TEXT, CD TEXT or Disc Memo (page 43).



When playing a DVD

■ TIME/MEMO or TIME/TEXT

- C **: **: **: Playing time of the current chapter
- C - **: **: **: Remaining time of the current chapter
- T **: **: **: Playing time of the current title
- T - **: **: **: Remaining time of the current title

When playing a VIDEO CD (during PBC playback)

■ TIME/MEMO

- S **: **: : Playing time of the current scene

When playing a VIDEO CD (in continuous play) or CD

■ TIME/MEMO or TIME/TEXT

- T **: **: : Playing time of the current track
- T - **: **: : Remaining time of the current track
- D **: **: : Playing time of the current disc
- D - **: **: : Remaining time of the current disc

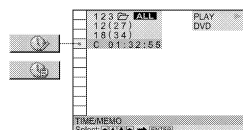
You can select "TIME/MEMO" or "TIME/TEXT" directly Press TIME/TEXT on the remote or on the player. Each time you press the button, the time information changes.

Selecting a Starting Point Using the Time Code

You can search for a starting point by inputting the time code.

Select "TIME/MEMO" or "TIME/TEXT" after pressing DISPLAY.

The time code corresponds to the approximate actual playing time. For example, to search for a scene 2 hours 10 minutes 20 seconds past the beginning, input 2:10:20.



1 Select "C **: **: :*" (playing time of the current chapter) when playing a DVD.



2 Press \Rightarrow or ENTER.

Time code changes to "T - - - - -".



3 Input the time code using the number buttons, then press ENTER.

The player starts playback at the selected time code. To cancel the number, press CLEAR before pressing ENTER.

To cancel while making a selection

Press \Rightarrow RETURN.

Note

When you input the time code, input the playing time of the title, not the chapter or track time.

Viewing the Disc Information

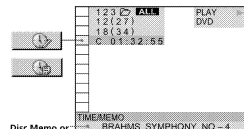


You can check the DVD TEXT, CD TEXT or Disc Memo on the TV screen and the front panel display.

Press DISPLAY. Then press TIME/TEXT until DVD/CD TEXT is displayed. DVD TEXT and CD TEXT are information recorded on the disc which you cannot change.

The information is displayed at the bottom of the display. If you entered a Disc Memo in Edit mode of the Disc Explorer function, the Disc Memo will appear at the bottom of the display instead.

If the disc does not contain a label, "NO TEXT" is displayed.



Disc Memo or DVD/CD TEXT

You can select "TIME/MEMO" or "TIME/TEXT" directly Press TIME/TEXT on the remote or on the player. To display DVD/CD TEXT or Disc Memo, press TIME/TEXT until DVD/CD TEXT or Disc Memo is displayed.

You can view the entire DVD/CD TEXT or Disc Memo recorded on the disc DVD/CD TEXT or Disc Memo is scrolled on the front panel display.

You can input the text information (Disc Memo)

You can input the Disc Memo on the Disc Explorer (see page 32).

Notes

- "NO TEXT" appears when the DVD/CD TEXT is not recorded on the disc.
- This player can only display the first level of DVD/CD TEXT information.

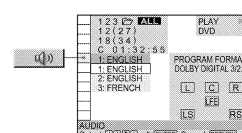
Changing the Sound



If the DVD is recorded with multilingual tracks, you can select the language you want while playing the DVD. If the DVD is recorded in multiple audio formats (PCM, Dolby Digital or DTS), you can select the audio format you want while playing the DVD.

With multiplex CDs or VIDEO CDs, you can select the sound from the right or left channel and listen to the sound of the selected channel through both the right and left speakers. In this case, the sound loses its stereo effect. For example, with a disc containing a song, the right channel may output the vocals and the left channel may output the instrumental. If you only want to hear the instrumental, you can select the left channel and hear it from both speakers.

Select "AUDIO" after pressing DISPLAY.



■ AUDIO

When playing a DVD

Select the language. The languages you can select are different depending on the DVD. When 4 digits are displayed, they represent the language code. Select the language code from the list on page 82.

When the same language is displayed two or more times, the DVD is recorded in multiple audio formats. The current audio format is shown on the "PROGRAM FORMAT" display.

When playing a VIDEO CD or a CD

The default setting is underlined.

- STEREO: The standard stereo sound
- 1/L: The sound of the left channel (monaural)
- 2/R: The sound of the right channel (monaural)

Changing the Sound

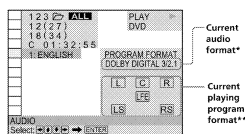
You can select "AUDIO" directly
Press AUDIO on the remote. Each time you press the button, the item changes.

Notes

- Depending on the DVD, you may not be able to change the languages even if multilingual tracks are recorded on the DVD.
- While playing the CD/VIDEO CD, standard stereo playback will be resumed when:
 - you open the front cover
 - the player enters standby mode by pressing I/O on the remote
 - you turn the power off by pressing 0 on the player
- While playing the DVD, the sound may be changed when:
 - you open the front cover
 - you change the title
- If "DTS" is set to "OFF" in "AUDIO SETUP," the DTS track selection option will not appear on the screen even if the disc contains DTS tracks.

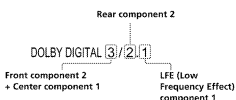
Displaying the audio information of the disc DVD

When you select "AUDIO," the channels being played are displayed on the screen.
For example, in Dolby Digital format, multiple signals ranging from monaural to 5.1 channel signals can be recorded on a DVD. Depending on the DVD, the number of the recorded channels may be different.



* "PCM," "DTS" or "DOLBY DIGITAL" is displayed. In case of "DOLBY DIGITAL," the channels in the playing track are displayed by numbers as follows:

For Dolby Digital 5.1 ch:



** The letters in the program format display mean the following:

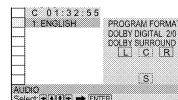
- L: Front (left)
- R: Front (right)
- C: Center (monaural)
- LS: Rear (left)
- RS: Rear (right)
- S: Rear (monaural) - the rear component of the Dolby Surround processed stereo signal and the Dolby Digital signal.
- LFE: LFE (Low Frequency Effect)

The display examples are as follows:

• PCM (stereo)

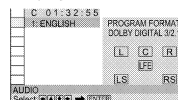


• Dolby Surround



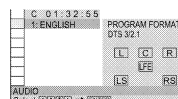
• Dolby Digital 5.1ch

"LFE" appears only when a disc contains an LFE signal component. "LFE" remains on the "PROGRAM FORMAT" display even if the LFE signal component is not being output.



• DTS

"LFE" is always enclosed in a solid line regardless of the LFE signal component being output.



Note

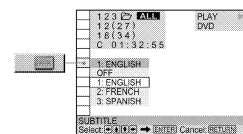
When the signal does not contain rear signal components such as LS, RS or S, the Virtual Enhanced Surround (VES) effect cannot be heard (page 47).

Displaying the Subtitles DVD

With DVDs on which subtitles are recorded, you can turn the subtitles on and off whenever you want while playing the DVD.

With DVDs on which multilingual subtitles are recorded, you can change the subtitle language whenever you want while playing the DVD, and turn it on or off whenever you want. For example, you can select the language you want to practice and turn the subtitles on for better understanding.

Select "SUBTITLE" after pressing DISPLAY.



■ SUBTITLE

Select the language. The languages you can select are different depending on the DVD. When 4 digits are displayed, they indicate the language code. Select the language code from the list on page 82.

You can select "SUBTITLE" directly
Press SUBTITLE on the remote. Each time you press the button, the item changes.

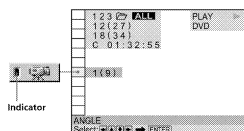
Notes

- When playing a DVD on which no subtitles are recorded, no subtitles appear.
- Depending on the DVD, you may not be able to turn the subtitles on even if they are recorded on the DVD.
- Depending on the DVD, you may not be able to turn the subtitles off.
- The type and number of languages for subtitles vary from disc to disc.
- Depending on the DVD, you may not be able to change the subtitles even if multilingual subtitles are recorded on it.
- While playing the DVD, the subtitle may change when:
 - you open the front cover
 - you change the title

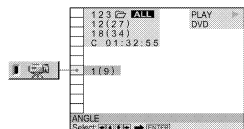
Changing the Angles DVD

With DVDs on which various angles (multi-angles) for a scene are recorded, you can change the angles. For example, while playing a scene of a train in motion, you can display the view from either the front of the train, the left window of the train or from the right window without having the train's movement interrupted.

Select "ANGLE" after pressing DISPLAY. When the angles can be changed, the "ANGLE" indicator lights up in green.

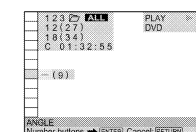


1 Select "ANGLE."



2 Press →.

The number of the angle changes to "→". The number in parentheses indicates the total number of angles.



3 Select the angle number using the number buttons or 1/4, then press ENTER.

The angle is changed to the selected angle.



You can select the angle directly

Press ANGLE on the remote. Each time you press the button, the angle changes.

You can display different angles simultaneously (ANGLE VIEWER)

You can display all the angles recorded on the disc on the same screen, and start playback in continuous mode from the chosen angle directly. The angles are displayed on a screen divided in 9 sections. For details, see page 57.

Notes

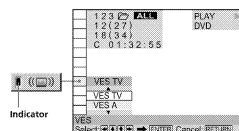
- The number of angles varies from disc to disc or from scene to scene. The number of angles that can be changed on a scene is equal to the number of angles recorded for that scene.
- Depending on the DVD, you may not be able to change the angles even if multi-angles are recorded on the DVD.

Digital Cinema Sound Settings DVD

Select a mode to enjoy multichannel surround sound such as Dolby Digital.

Even if you connect only a stereo TV or front speakers, Virtual Enhanced Surround (VES) lets you enjoy 3D sound by using 3D sound imaging to create virtual rear speakers from the sound of the front speakers (L: left, R: right) without using actual rear speakers. The surround sound signals are output from the AUDIO OUT connectors. These signals are not output from the DIGITAL OUT OPTICAL or COAXIAL connector. When you select a surround mode, the player does not output the Dolby Digital signals from the DIGITAL OUT OPTICAL or COAXIAL connector if you set "DOLBY DIGITAL" in "AUDIO SETUP" to "D-PCM."

Select "VES" after pressing DISPLAY. When you select any item except "OFF," the "VES" indicator lights up in green.



■ VES

Select the desired item. For details on each item, see "Effects of each item."

The default setting is underlined.

- OFF
- VES TV
- VES A
- VES B
- VIRTUAL SEMI MULTI DIMENSION

Effects of each item

OFF

Outputs 2-channel signals for stereo sound. 5-channel signals for Dolby Digital sound of a DVD are mixed down to 2-channels.

VES (Virtual Enhanced Surround) TV

Uses 3D sound imaging to create virtual rear speakers from the sound of the front speakers (L, R) without using actual rear speakers. This mode is effective when the distance between the front L and R speakers is short, such as built-in speakers on a stereo TV.



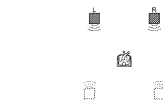
VES (Virtual Enhanced Surround) A

Uses 3D sound imaging to create virtual rear speakers from the sound of the front speakers (L, R) without using actual rear speakers. The virtual speakers are reproduced as shown in the illustration below.



VES (Virtual Enhanced Surround) B

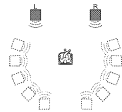
Uses 3D sound imaging to create virtual rear speakers from the sound of the front speakers (L, R) without using actual rear speakers. The virtual speakers are reproduced as shown in the illustration below.



Digital Cinema Sound Settings

VIRTUAL SEMI MULTI DIMENSION

Uses 3D sound imaging to create virtual rear speakers from the sound of the front speakers (L, R) without using actual rear speakers. This mode creates 5 sets of virtual speakers surrounding the listener at a 30° angle of elevation.



You can select "YES" directly

Press YES on the player. Each time you press the button, the item changes.

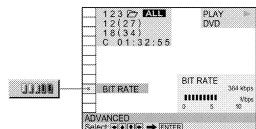
Notes

- When you select an item, the sound cuts off for a moment.
- When the playing signal does not contain the surround component, the effects may be difficult to hear even if you select "YES TV," "YES A," "YES B" or "VIRTUAL SEMI MULTI DIMENSION."
- Set the front speakers to form an equilateral triangle with the listening position at the top, or the effects may be difficult to hear even if you select "YES A," "YES B" or "VIRTUAL SEMI MULTI DIMENSION."
- When you select "YES TV," "YES A," "YES B" or "VIRTUAL SEMI MULTI DIMENSION," set the surround settings of the connected units, such as the amplifier, to OFF.

Checking the Play Information (DVD)

You can check information such as the bit rate or the disc layer that is being played. While playing a disc, the approximate bit rate of the playback picture is always displayed as Mbps (Mega bit per second) and the audio as kbps (kilo bit per second).

Select "ADVANCED" after pressing DISPLAY.



ADVANCED

The default setting is underlined.

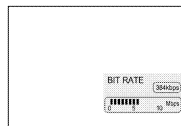
When playing a DVD

- BIT RATE: displays the bit rate.
- LAYER: displays the layer and the pick-up point.
- OFF: turns off the ADVANCED display.

Displays of each item

By pressing DISPLAY repeatedly, you can display either "BIT RATE" or "LAYER," whichever was selected in "ADVANCED."

BIT RATE



Bit rate refers to the amount of video/audio data per second in a disc. The higher the bit rate, the larger the amount of data. When the bit rate level is high, there is a large amount of data. However, this does not always mean that you can get higher quality pictures or sounds.

LAYER



Appears when the DVD has dual layers

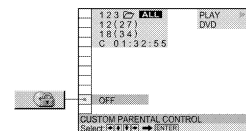
Indicates the approximate point where the disc is playing. If it is a dual-layer DVD, the player indicates which layer is being read ("Layer 0" or "Layer 1"). For details on the layers, see page 81 (DVD).

Locking Discs (Custom Parental Control)



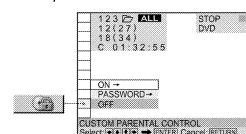
Using a registered password, you can set playback restrictions for the desired disc(s). You can set the same Custom Parental Control password for up to 301 slots. When you have the player store a new disc in memory, the data for the old disc is erased. The same password is used for both Parental Control (page 66) and Custom Parental Control.

Select "CUSTOM PARENTAL CONTROL" after pressing DISPLAY.



Setting the Custom Parental Control for a disc

- Select the disc you want to lock. If a disc is playing, press **STOP** to stop playback.
- Select "CUSTOM PARENTAL CONTROL" using **1/4**, then press ENTER.

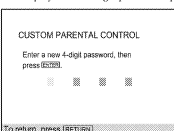


Locking Discs (Custom Parental Control)

- Select "ON" using **1/4**, then press ENTER.

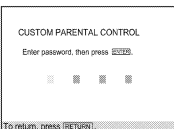
If you have not entered a password

The display for entering a password appears.



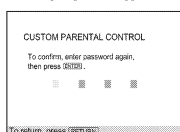
When you have already registered a password

The display for confirming the password appears. Skip Step 4.



- Enter a 4-digit password using the number buttons, then press ENTER.

The digits change to asterisks (*), and the display for confirming the password appears.



- Enter the same 4-digit password using the number buttons, then press ENTER.

"Custom parental control is set." appears and then the screen returns to the Control Menu display.

To return to the normal screen

Press **RETURN**.

To turn off the Custom Parental Control function

- Select the disc for which you want to turn off the Custom Parental Control function.
- Select "CUSTOM PARENTAL CONTROL" using **1/4**, then press ENTER.
- Select "OFF" using **1/4**, then press ENTER.
- Enter your 4-digit password using the number buttons, then press ENTER.

To change the password

- Select "CUSTOM PARENTAL CONTROL" using **1/4**, then press ENTER.
- Select "PASSWORD" using **1/4**, then press ENTER.
- Enter your 4-digit password using the number buttons, then press ENTER.
- The display for changing the password appears.
- Enter a new 4-digit password using the number buttons, then press ENTER.
- To confirm your password, re-enter it using the number buttons, then press ENTER.

Playing the disc for which the Custom Parental Control is set

- Select the disc.

The CUSTOM PARENTAL CONTROL display appears.



- Enter your 4-digit password using the number buttons, then press ENTER.

The player starts playback.

If you forget your password

Enter the 6-digit number "199700" whenever the CUSTOM PARENTAL CONTROL display asks you for your password, then press ENTER. The display will ask you to enter a new 4-digit password.

Note

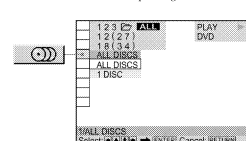
Unless you enter the password, the player cannot play the disc for which the Custom Parental Control is set. When you do not know the password, press OPEN/CLOSE and remove the disc.

Selecting the Disc Mode (1 Disc or All Discs)



You can have the player play one disc or all of the discs in the player. Before setting Program Play, Shuffle Play, or Repeat Play, you must select whether to set those play modes on one disc or all of the discs.

Select "1/ALL DISCS" after pressing DISPLAY.



1/ALL DISCS

- ALL DISCS: will play all of the discs in the player in consecutive order. Also allows you to set Program Play, Shuffle Play or Repeat Play for all of the loaded discs.
- 1 DISC: will play the selected disc to the end. Also allows you to set Program Play, Shuffle Play or Repeat Play for 1 disc only.

You can select the mode directly

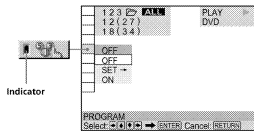
Press 1/ALL DISCS on the remote or the player. Each time you press the button, 1 DISC or ALL DISCS mode is selected.

Creating Your Own Program (Program Play)



You can play the contents of the disc(s) in the order you want by arranging the order of the titles, chapters or tracks on the disc(s) and create your own program. One program can be stored in the player and contain up to 99 titles, chapters and tracks. By selecting "1/ALL DISCS," you can create a program for one or all of the discs in the player.

Select "PROGRAM" after pressing DISPLAY. When you select "ON," the "PROGRAM" indicator lights up in green.



PROGRAM

The default setting is underlined.

- OFF: plays normally.
- SET: allows you to create your own program.
- ON: plays Program Play.

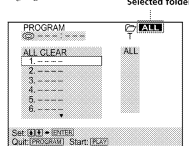
Note

If the program contains a disc which is not included in the current folder, the disc will not be played during Program Play. To play all the discs in the program select the ALL folder before you start Program Play.

Creating the program

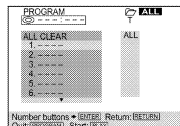
1 Select "SET" in "PROGRAM."

The programming display appears and "1" is highlighted.



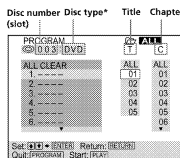
2 Press ENTER.

It is ready to set the first disc of a title or track for Program Play.



3 Select the disc you want to program using the number buttons or 1/4, then press ENTER.

To select the EASY PLAY disc, press 301. "EZ" appears at the disc number.



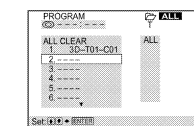
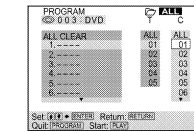
* "2" appears when the player has not loaded the disc information in the memory. If an empty slot is loaded, the disc type does not appear.

4 Select the title, chapter or track you want to program using 1/4, then press ENTER.

You can also use the number buttons and ENTER button to make a selection. In this case, the selected number is displayed on the screen.

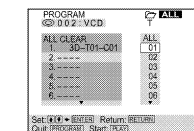
■ When playing a DVD

For example, select title 1, chapter 1 in disc 3. When both titles and chapters are recorded on the disc, select the title, then the chapter.



■ When playing a VIDEO CD or CD

For example, select track 1 in disc 2.



5 To program other discs, titles, chapters or tracks, repeat Steps 3 and 4.

The programmed discs, titles, chapters or tracks are displayed in the selected order.

6 Press 1/4 to start Program Play.

To stop Program Play
Press CLEAR on the remote.

To cancel programming
Press PROGRAM on the remote.

To change the program

1 In Step 3, select the disc for which you want to change the program using 1/4.
2 Follow Step 4 for new title, chapter or track programming.

To cancel the programmed order

To cancel all the titles, chapters or tracks in the programmed order, select "ALL CLEAR."
To cancel the selected program, select the program using 1/4 then press CLEAR.

The program remains even after Program Play ends
When you press 1/4, you can play the same program again.

You can do Repeat Play or Shuffle Play of the programmed titles, chapters or tracks
During Program Play, press REPEAT or SHUFFLE. Or set "REPEAT" or "SHUFFLE" to "ON" in the Control Menu display.

You can select "PROGRAM" directly
Press PROGRAM on the remote.

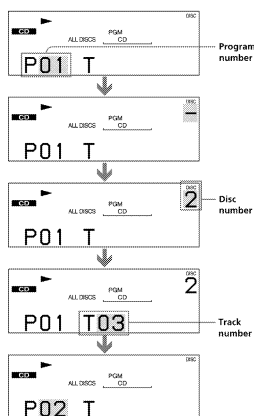
For easier programming, load the disc information
Press LOAD when the player is in standby or stop mode so that the player reads and loads the disc information.

Disc types are abbreviated on-screen as follows.

DVD: D
VCD: V
CD: C

Creating Your Own Program (Program Play)

You can select discs, titles, chapters and tracks for the program by looking at the front panel display
You can program by looking at the front panel display instead of using the programming display on the TV screen.
When you select Track 3 in a CD in disc slot 2 in the CD folder for Program 1, the front panel display will appear as follows:



Notes

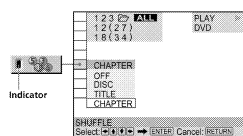
- The number of titles, chapters or tracks displayed are the same number of titles, chapters or tracks recorded on a disc.
- Program play is canceled when:
 - you open the front cover
 - the player enters standby mode by pressing 1/4 on the remote
 - you turn the power off by pressing 0 on the player
- You cannot select side B contents for Program Play.
- Depending on the DVD, you may not be able to perform Program Play.
- If you are using the PBC playback function, you must first stop the disc before you can set a program.

Playing in Random Order (Shuffle Play)



You can have the player "shuffle" discs, titles, chapters or tracks and play them in a random order. Subsequent "shuffling" may produce a different playing order. By selecting "1/ALL DISCS," you can have the player shuffle one disc or all of the discs in the selected folder.

Select "SHUFFLE" after pressing DISPLAY. When you select a shuffle mode other than "OFF," the "SHUFFLE" indicator lights up in green.



SHUFFLE

Selects the Shuffle Play setting.
The default settings are underlined.

When playing a DVD and when Program Play is set to OFF

- QEE: does not play the disc(s) in random order.
- DISC: has the player "shuffle" discs in the folder and play them in a random order.
- TITLE: has the player "shuffle" titles in the folder and play them in a random order.
- CHAPTER: has the player "shuffle" chapters in the folder and play them in a random order.

When playing a VIDEO CD or CD (when Program Play is set to OFF)

- QEE: does not play the disc(s) in random order.
- DISC: has the player "shuffle" discs in the folder and play them in a random order.
- TRACK: has the player "shuffle" tracks in the folder and play them in a random order.

When playing a VIDEO CD, CD or DVD (when Program Play is set to ON)

- QEE: does not play the disc(s) in random order.
- ON: has the player "shuffle" titles or tracks selected in Program Play and play them in a random order.

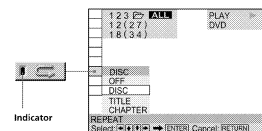
* Appears only when you select "ALL DISCS" in "1/ALL DISCS."

Playing Repeatedly (Repeat Play)



You can play all discs, or all of the titles or tracks on a disc, or a single title, chapter or track repeatedly.
In Shuffle or Program Play mode, the player repeats the titles or tracks in the shuffled or programmed order. By selecting "1/ALL DISCS," you can have the player repeat one disc or all of the discs in the selected folder. You cannot perform Repeat Play during PBC playback of VIDEO CDs (page 25).

Select "REPEAT" after pressing DISPLAY. When you select a repeat mode other than "OFF," the "REPEAT" indicator lights up in green.



REPEAT

Selects the Repeat Play setting.
The default settings are underlined.

When playing a DVD and when Program Play and Shuffle Play are set to OFF

- QEE: does not play repeatedly.
- DISC: repeats all titles on the selected disc when you select "1 DISC" in "1/ALL DISCS," and repeats all titles in all discs in the folder when you select "ALL DISCS."
- TITLE: repeats the current title on a disc.
- CHAPTER: repeats the current chapter.

When playing a VIDEO CD/CD and when Program Play and Shuffle Play are set to OFF

- QEE: does not play repeatedly.
- DISC: repeats all tracks on the selected disc when you select "1 DISC" in "1/ALL DISCS," and repeats all tracks in all discs in the folder when you select "ALL DISCS."
- TRACK: repeats the current track.

Playing Repeatedly (Repeat Play)

When Program Play or Shuffle Play is on

- QEF does not play repeatedly.
- ON: repeats Program Play or Shuffle Play.

To stop Repeat Play

Press CLEAR on the remote.

You can set Repeat Play while the disc is stopped
After selecting the "REPEAT" option, press >. The player starts Repeat Play.

You can select "REPEAT" directly
Press REPEAT on the player or the remote. Each time you press the button, the item changes.

Notes

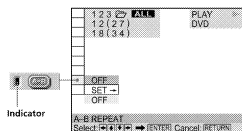
- Repeat play is canceled when:
 - you open the front cover
 - the player enters standby mode by pressing I/O on the remote
 - you turn the power off by pressing Q on the player
- Depending on the DVD, you may not be able to perform Repeat Play.
- You cannot set Repeat Play on side B contents.

Repeating a Specific Portion (A-B Repeat)

DVD VIDEO CD

You can play a specific portion of a title, chapter or track repeatedly. This function is useful when you want to do such things as memorize lyrics.
During PBC Playback of VIDEO CDs (page 25), this function is available only while playing moving pictures.

Select "A-B REPEAT" after pressing DISPLAY. During A-B Repeat Play, the "A-B REPEAT" indicator lights up in green.



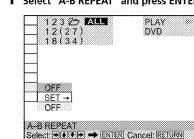
A-B REPEAT

The default setting is underlined.

- SET → sets the A and B points.
- QEF does not play a specific portion of a title/chapter/track repeatedly.

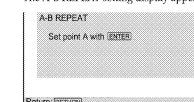
Setting a portion for A-B repeat

1 Select "A-B REPEAT" and press ENTER.



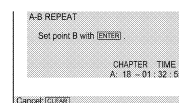
2 Select "SET" and press ENTER.

The A-B REPEAT setting display appears.



3 During playback, when you find the starting point (point A) of the portion to be played repeatedly, press ENTER.

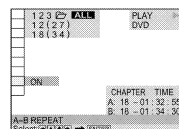
The starting point (point A) is set.



4 When you reach the ending point (point B), press ENTER again.

The set points are displayed and the player starts repeating this specific portion.

"A-B" appears on the front panel display during A-B repeat play.



To stop A-B Repeat Play

Press CLEAR on the remote.

Notes

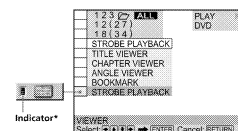
- You can set A-B Repeat for only one specific portion.
- A-B Repeat is canceled when:
 - you open the front cover
 - the player enters standby mode by pressing I/O on the remote
 - you turn the power off by pressing Q on the player
- When you set A-B Repeat, the settings for Shuffle Play, Repeat Play, and Program Play are canceled.
- You may not be able to set A-B Repeat for some DVD or VIDEO CD scenes.
- You cannot set the start point (point A) on one disc and ending point (point B) on other disc.

Using the Quick Reference Screen (VIEWER) DVD VIDEO

You can divide the screen into 9 sections (quick reference screen) and enjoy the following functions.

- STROBE PLAYBACK
- TITLE VIEWER (DVD only)
- CHAPTER VIEWER (DVD only)
- TRACK VIEWER (VIDEO CD only)
- ANGLE VIEWER (DVD only)
- BOOKMARK

Select "VIEWER" after pressing DISPLAY.



* The indicator lights up when a bookmark is in memory.

Dividing a track into 9 sections (STROBE PLAYBACK) DVD VIDEO

You can display 9 consecutive sections of the disc on the screen. If you are playing a disc, you can change the speed of the images on the screen by turning the click shuttle. When you press II, 9 still images around the pause position are displayed.

Select "STROBE PLAYBACK" in "VIEWER" and press ENTER. Nine consecutive scenes appear on the screen.

To cancel watching the strobe play

Press <RETURN>.

Notes

- Depending on the disc, there are some scenes you may not be able to watch with the strobe play function.
- The sound is muted when using this function.

Using the Quick Reference Screen (VIEWER)

Scanning the title, chapter, or track

DVD VIDEO

You can check the first picture of titles, chapters or tracks of the disc, and start playback from the chosen title, chapter or track.

When playing a DVD, select "TITLE VIEWER" or "CHAPTER VIEWER" in "VIEWER" and press ENTER.

When playing a VIDEO CD, select "TRACK VIEWER" in "VIEWER" and press ENTER.

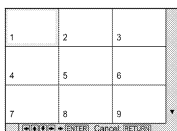
The screen will divide into 9 sections and show the first picture of each title, chapter or track.

To start playback from the selected picture

Select the picture using <1>/<2>/<3>, then press ENTER. Playback starts from the selected picture.

When there are over 9 titles, chapters or tracks

<V> appears at the right bottom of the screen. Select the right bottom scene (the position 9) and use <1> to display the next titles, tracks or chapters. To return to the previous scene, select the left top scene (the position 1) and press <1>.



You can check the number on the front panel display
The number of the title, chapter or track, you selected is displayed on the front panel display.

To cancel scanning the title, chapter or track
Press <RETURN>.

Notes

- Depending on the disc, you may not be able to scan the title, chapter or track.
- The sound is muted when using this function.

Displaying different angles

simultaneously DVD

With DVDs on which various angles (multi-angles) for a scene are recorded, you can display all of the angles recorded on the disc on the same screen, and start playback in continuous mode at the chosen angle. The angles are displayed on a screen divided in 9 sections.

Select "ANGLE VIEWER" in "VIEWER." The available angles appear on the screen.

To select one angle

Select the angle using <1>/<2>/<3>, then press ENTER. The selected angle is displayed.

To cancel displaying multi-angles

Press <RETURN>.

You can check the angle number on the front panel display

The number of the angle you selected is displayed on the front panel display.

Notes

- If only one angle is recorded on the disc, then you will not be able to use this function.
- Depending on the DVD, you may not be able to change the angles even if multi-angles are recorded on the DVD.
- When a scene for which various angles (multi-angles) are not recorded appears when using this function, the player returns to normal playback.
- The sound is muted when using this function.

Setting and selecting favorite scene

(Bookmark) DVD VIDEO

You can have the player store specific portions of the disc in memory and play them immediately whenever you want (Bookmark). Up to 9 bookmarks per disc for up to 301 slots can be stored in memory.

Select "BOOKMARK" in "VIEWER." The bookmarks appear on the screen.

To start playback from the selected picture

Select the picture using <1>/<2>/<3>, then press ENTER. Playback starts from the selected picture.

To cancel scanning the bookmark pictures

Press <RETURN>.

To reset the bookmark

Select the bookmark you want to reset using <1>/<2>/<3>, then press CLEAR.

To reset all of the bookmarks for the player

Select "BOOKMARK RESET" under "CUSTOM SETUP" in the setup display. For details on resetting all of the bookmarks for the player, see page 66.

Setting a bookmark

During playback, when you find a scene to be bookmarked, press BOOKMARK on the remote.



You can check the bookmark number on the front panel display

The number of the bookmark you selected is displayed on the front panel display.

Settings and Adjustments

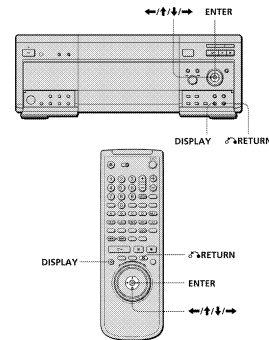
This chapter describes how to set and adjust the player using the on-screen setup menu. Most settings and adjustments are required to be set when you first use the player. This chapter also describes how to set the remote for controlling the TV or the AV receiver (amplifier) or the CD changer.

Using the Setup Display

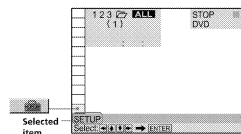
Using the setup display, you can do the initial setup, adjust the picture and sound and set the various outputs. You can also set a language for the subtitles and the setup display, limit playback by children, and so on. For details on each setup display item, see pages 63 to 71.

Note

You can display the setup display only when the player is in stop mode.

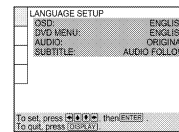


1 Press DISPLAY and select "SETUP" using \uparrow/\downarrow .

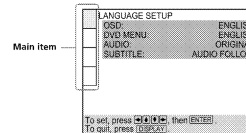


2 Press ENTER.

The setup display appears.

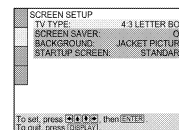


3 Select the main item you want using \uparrow/\downarrow .

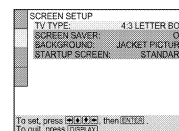


4 Press ENTER.

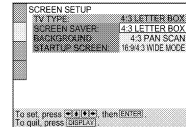
The selected main item is highlighted.



5 Select the item you want using \uparrow/\downarrow .



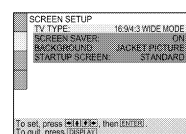
6 Press ENTER.



7 Select the setting you want using \uparrow/\downarrow .



8 Press ENTER.



9 Press DISPLAY.

The setup display disappears.

10 Press DISPLAY repeatedly to turn off the on-screen menu.

To return to the previous screen Press \rightarrow RETURN.

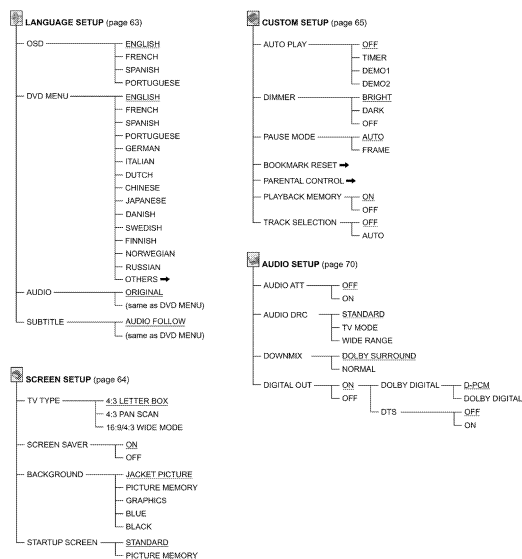
To quit while making a selection Press DISPLAY.

Note

Some setup display items require operations other than selecting the setting. For details on these items, see the relevant pages.

Setup Display Item List

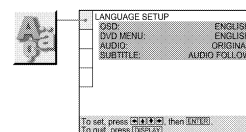
The default settings are underlined>.



Setting the Display Language or Sound Track (LANGUAGE SETUP)

"LANGUAGE SETUP" allows you to set various languages for the on-screen display or sound track. The default settings are underlined.

Select "LANGUAGE SETUP" in the setup display.



Notes

- When you select a language that is not recorded on the DVD, one of the recorded languages is automatically selected for the "DVD MENU," "AUDIO" and "SUBTITLE" settings.
- Depending on the DVD, the player may not start playing with the selected language even when you select a language in "DVD MENU," "AUDIO" or "SUBTITLE."

■ OSD (On-Screen Display)

Selects the language for the on-screen display.

- ENGLISH
- FRENCH
- SPANISH
- PORTUGUESE

■ DVD MENU

Selects the language for the DVD menu.

- ENGLISH
- FRENCH
- SPANISH
- PORTUGUESE

- GERMAN
- ITALIAN
- DUTCH
- CHINESE

- JAPANESE
- DANISH
- SWEDISH
- NORWEGIAN

When you select "OTHERS" \rightarrow , select and enter the language code from the list using the number buttons (page 82). After you have made a selection, the language code (4 digits) is displayed.

■ AUDIO

Selects the language for the sound track.

- ORIGINAL: the language given priority in the disc
- ENGLISH
- FRENCH
- SPANISH
- PORTUGUESE

- GERMAN
- ITALIAN
- DUTCH
- CHINESE

- JAPANESE
- DANISH
- SWEDISH
- FINNISH

- NORWEGIAN
- RUSSIAN
- OTHERS \rightarrow

When you select "OTHERS" \rightarrow , select and enter the language code from the list using the number buttons (page 82). After you have made a selection, the language code (4 digits) is displayed.

■ SUBTITLE

Selects the language for the subtitles.

- AUDIO FOLLOW*
- ENGLISH
- FRENCH
- SPANISH
- PORTUGUESE

- GERMAN
- ITALIAN
- DUTCH
- CHINESE

- JAPANESE
- DANISH
- SWEDISH
- FINNISH

- NORWEGIAN
- RUSSIAN
- OTHERS \rightarrow

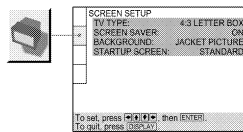
When you select "OTHERS" \rightarrow , select and enter the language code from the list using the number buttons (page 82). After you have made a selection, the language code (4 digits) is displayed.

* When you select "AUDIO FOLLOW," the language for the subtitles changes according to the language you selected for the sound track.

Settings for the Display (SCREEN SETUP) DVD VIDEO CD

"SCREEN SETUP" allows you to set the display according to the playback conditions. The default settings are underlined.

Select "SCREEN SETUP" in the setup display.



TV TYPE

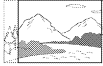
Selects the aspect ratio of the TV to be connected.

- **4:3 LETTER BOX:** select this when you connect a normal TV to the player. Displays a wide picture with bands on the upper and lower portions of the screen.
- **4:3 PAN SCAN:** select this when you connect a normal TV to the player. Displays the wide picture on the whole screen automatically and cuts off the portions that do not fit.
- **16:9/4:3 WIDE MODE:** select this when you connect a wide-screen TV to the player or when you connect a TV with the WIDE MODE function to the player (displays a wide picture with bands displayed on the upper and lower portions of the screen).

4:3 LETTER BOX



4:3 PAN SCAN



16:9



4:3 WIDE MODE



Note

Depending on the DVD, "4:3 LETTER BOX" may be selected automatically instead of "4:3 PAN SCAN" and vice versa.

SCREEN SAVER

Turns on and off the screen saver. If you turn on the screen saver, the screen saver image appears when you leave the player or the remote in pause or stop mode for 15 minutes, or when you play back a CD for more than 15 minutes. The screen saver will help prevent your display device from becoming damaged.

- **ON:** turns on the screen saver.
- **OFF:** turns off the screen saver.

BACKGROUND

Selects the background color or picture on the TV screen in stop mode or while playing a CD.

- **JACKET PICTURE:** The jacket picture appears in the background, but only when the jacket picture is already recorded on the disc.
- **PICTURE MEMORY:** Your favorite picture appears in the background. For an explanation of how to store your favorite scene recorded on the disc for the background picture, see the following section "Storing a picture in memory."
- **GRAPHICS:** A preset picture stored in the player appears in the background.
- **BLUE:** The background color is blue.
- **BLACK:** The background color is black.

Note

If a disc which does not contain the jacket picture is played while "BACKGROUND" is set to "JACKET PICTURE," the picture stored in the player will automatically appear in the background.

STARTUP SCREEN

Selects the startup screen. The startup screen image you selected appears when you turn on the player.

- **STANDARD:** The standard startup screen in the player's memory appears.
- **PICTURE MEMORY:** Your favorite picture appears in the startup screen. For an explanation of how to store your favorite scene recorded on the disc for the startup screen, see the following section "Storing a picture in memory."

If you select PICTURE MEMORY before setting a picture in memory, the standard startup screen will appear.

Storing a picture in memory

During playback, when you find the scene to be stored in memory, press **PICTURE MEMORY** on the remote. The picture is stored in memory.



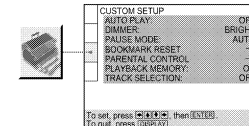
Notes

- The player can store only one scene in memory. The stored picture appears in both the background and the startup screen.
- Depending on the DVD, some scenes cannot be stored in memory when using the remote.
- When the picture is stored in memory by pressing PICTURE MEMORY, the picture stored before is erased.
- If you operate this player while the picture is being stored in memory, the player will fail to store the picture.

Custom Settings (CUSTOM SETUP) DVD VIDEO CD

"CUSTOM SETUP" allows you to set the playback conditions. The default settings are underlined.

Select "CUSTOM SETUP" in the setup display.



AUTO PLAY

Selects the Auto Play setting when you connect the AC power cord to the AC outlet.

- **OFF:** does not use "TIMER," "DEMO1" or "DEMO2" to start playback.
- **TIMER:** starts playing when the player is turned on, or at any time you want when connected to a timer (not supplied). Set the timer when the player is in standby mode (the power indicator lights up in red).
- **DEMO1:** starts playing the first demonstration automatically.
- **DEMO2:** starts playing the second demonstration automatically.

DIMMER

Adjusts the lighting of the front panel display.

- **BRIGHT:** makes the front panel display bright.
- **DARK:** makes the front panel display dark.
- **OFF:** turns off the lighting of the front panel display.



You also can adjust the lighting with the DIMMER button on the player.

PAUSE MODE (DVD only)

Selects the picture in pause mode.

- **AUTO:** A picture, including subjects that move dynamically, is output with no jitter. Normally select this position.
- **FRAME:** A picture including subjects that do not move dynamically is output with high resolution.

Custom Settings (CUSTOM SETUP)

BOOKMARK RESET

Select "BOOKMARK RESET" →. The BOOKMARK RESET display appears. And then press ENTER to reset all bookmarks.

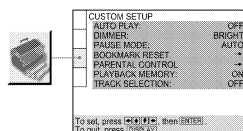
PARENTAL CONTROL

Sets a password and playback limitation level for DVDs with playback limitation for children. The same password is used for both Parental Control and Custom Parental Control (page 49). For details, see "Limiting Playback by Children (Parental Control)."

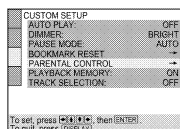
Limiting Playback by Children (Parental Control) DVD

Playback of some DVDs can be limited depending on the age of the users. The "Parental Control" function allows you to set a playback limitation level.

Select "CUSTOM SETUP" in the setup display.



1 Select "PARENTAL CONTROL" using \uparrow/\downarrow , then press ENTER.



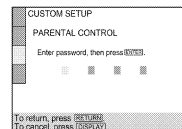
When you have not entered a password

The display for entering a password appears.



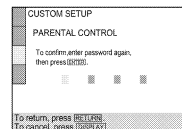
When you have already registered a password

The display for confirming the password appears. Skip Step 2.

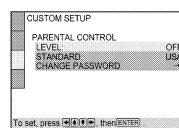


2 Enter a password in 4 digits using the number buttons, then press ENTER.

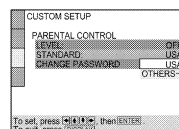
The digits change to asterisks (*), and the display for confirming the password appears.



3 To confirm your password, enter it again using the number buttons, then press ENTER. The display for setting the playback limitation level and changing the password appears.

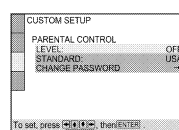


4 Select "STANDARD" using \uparrow/\downarrow , then press →.

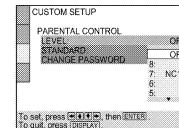


5 Select a geographic area as the playback limitation level standard using \uparrow/\downarrow , then press ENTER.

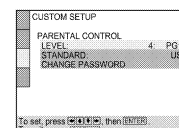
When you select "OTHERS" →, select and enter the standard code in the table on the next page using the number buttons.



6 Select "LEVEL" using \uparrow/\downarrow , then press →.



7 Select the level you want using \uparrow/\downarrow , then press ENTER.



The lower the value, the more strict the limitation.

To return to the normal screen

Press DISPLAY.

To turn off the Parental Control function and play the DVD after entering your password Set "LEVEL" to "OFF" in Step 7, then press C>.

Custom Settings (CUSTOM SETUP)

To change the password

- After Step 3, select "CHANGE PASSWORD" using \uparrow/\downarrow , then press \rightarrow or ENTER. The display for changing the password appears.
- Follow Steps 2 and 3 to enter a new password.

Playing a disc which is blocked by the playback limitation level

- Insert the disc and press \square . The PARENTAL CONTROL display appears.
- Enter your 4-digit password using the number buttons, then press ENTER. The player starts playback. When you stop playing the DVD, the level returns to the original level.

If you forget your password

Enter the 6-digit number "190703" whenever the PARENTAL CONTROL display asks you for your password, then press ENTER. The display will ask you to enter a new 4-digit password.

Notes

- When you play DVDs which do not have the Parental Control function, playback cannot be limited on this player.
- If you do not set a password, you cannot change the settings for playback limitation.
- Depending on the DVD, you may be asked to change the Parental Control level while playing the disc. In this case, enter your password, then change the level. When you stop playing the DVD, the level returns to the original level.
- The same password is used for both Parental Control and Custom Parental Control (page 49).

Standard	Code number
Argentina	2044
Australia	2047
Austria	2046
Belgium	2057
Brazil	2070
Canada	2079
Chile	2090
China	2092
Denmark	2115
Finland	2165
France	2174
Germany	2109
Hong Kong	2219
India	2248
Indonesia	2238
Italy	2254
Japan	2276
Korea	2304
Malaysia	2363
Mexico	2362
Netherlands	2376
New Zealand	2390
Norway	2379
Pakistan	2427
Philippines	2424
Portugal	2436
Russia	2489
Singapore	2501
Spain	2149
Sweden	2499
Switzerland	2086
Taiwan	2543
Thailand	2528
United Kingdom	2184

PLAYBACK MEMORY (DVD only)

The player can store the AUDIO, SUBTITLE and other settings of each disc for up to 301 slots (Playback Memory).

Set the Playback Memory function on or off.

- ON: stores the settings in memory when you eject the disc.
- OFF: does not store the settings in memory.

The following settings are stored in memory by the Playback Memory function.

- AUDIO (page 43)
- SUBTITLE (page 45)
- ANGLE (page 46)
- VES (page 47)

Notes

- The player can store the settings of up to 301 slots. When you have the player store a new disc in memory, the data for the old disc is erased.
- The Playback Memory settings are not effective for side B.
- Depending on the DVD, the information stored in the disc takes priority over the Playback Memory settings and the function does not work.
- Do not turn off the player by pressing \square . Doing so may cancel the settings. When you turn off the player, press \blacksquare first to stop playback and then press \uparrow/\downarrow on the remote. After the power indicator lights up in red and the player enters standby mode, press \square on the player.

TRACK SELECTION

Gives the sound track which contains the highest number of channels priority when you play a DVD on which multiple audio formats (PCM, DTS or Dolby Digital format) are recorded.

- QEF: No priority given.
- AUTO: Priority given.

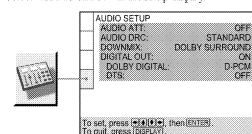
Notes

- When you set this item to "AUTO," the language may change depending on the "AUDIO" settings in "LANGUAGE SETUP." The "TRACK SELECTION" setting has higher priority than the "AUDIO" settings in "LANGUAGE SETUP" (page 63).
- If you set "DTS" in "AUDIO SETUP" to "OFF", the DTS sound track is not played even if you set this item to "AUTO" and the highest-numbered audio channel is recorded in DTS format.
- If PCM, DTS and Dolby Digital sound tracks have the same number of channels, the player selects PCM, DTS and Dolby Digital sound tracks in this order.
- Depending on the DVD, the audio channel with priority may be predetermined. In this case, you cannot give priority to the DTS or Dolby Digital format by selecting "AUTO."

Settings for the Sound (AUDIO SETUP)

"AUDIO SETUP" allows you to set the sound according to the playback conditions. The default settings are underlined.

Select "AUDIO SETUP" in the setup display.



AUDIO ATT (attenuation)

If the playback sound is distorted, set this item to "ON." The player reduces the audio output level. Selects the setting of the output from the AUDIO OUT (1, 2) connectors according to the audio equipment to be connected.

- QEF: turns off the audio attenuation. Normally select this position.
- ON: reduces the audio output level so that no sound distortion occurs. Select this when the playback sound from the built-in TV speakers is distorted.

Note

The setting does not affect the output from the DIGITAL OUT OPTICAL and COAXIAL connectors.

AUDIO DRC (Dynamic Range Control) (DVD only)

Makes the sound clear when the volume is turned down when playing a DVD. This function works only when you play a DVD which has the AUDIO DRC function. This affects the output from the DIGITAL OUT connectors only when "DOLBY DIGITAL" is set to "D-PCM" in "DIGITAL OUT," and it affects the output from the AUDIO OUT (1, 2) connectors.

- STANDARD: Normally select this position.
- TV MODE: makes the low sounds clear even if you turn the volume down. It is especially recommended when you listen to the sound using the speakers of the TV.
- WIDE RANGE: It gives you the feeling of being at a live performance. This function works only when you are playing a Dolby Digital disc. When you use high quality speakers, it is more effective.

Note

When you play DVDs without the AUDIO DRC function, there may be no effect on the sound.

DOWNMIX

Switches the mixing down methods when you play a DVD on which rear signal components such as LS, RS, or S are recorded in Dolby Digital format. For details on the rear signal components, see "Displaying the audio information of the disc" (page 44).

The "DOWNMIX" setting affects the following connectors:

- AUDIO OUT connectors
- DIGITAL OUT OPTICAL and COAXIAL connectors (when you set "DOLBY DIGITAL" to "D-PCM" in "AUDIO SETUP" in the setup display)
- DOLBY SURROUND: when the player is connected to an audio component that conforms to Dolby Surround (Pro Logic). The output signals which reproduce the Dolby Surround (Pro Logic) effect are mixed down to 2 channels.
- NORMAL: when the player is connected to an audio component that does not conform to Dolby Surround (Pro Logic). The signals without the Dolby Surround (Pro Logic) effect are output.

DIGITAL OUT

Selects output signals via the DIGITAL OUT OPTICAL and COAXIAL connectors.

- ON: Normally select this position. When you select "ON," set "DOLBY DIGITAL" and "DTS." For details on setting these items, see "Setting the Digital Output Signal."
- OFF: when the player does not output the sound signals via the DIGITAL OUT OPTICAL and COAXIAL connectors, the influence of the digital circuit upon the analog circuit is at a minimum.

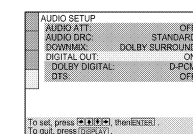
Notes

- When you play sound tracks with a 96 kHz sampling frequency, the output signals from the DIGITAL OUT OPTICAL and COAXIAL connectors are converted to 48 kHz (sampling frequency). The analog audio signals from the AUDIO OUT connectors are not affected by this setting and keep their original sampling frequency level.
- When you select "OFF," you cannot set "DOLBY DIGITAL" and "DTS."

Setting the Digital Output Signal

Switches the methods of outputting audio signals when you connect 1. a digital component such as a receiver (amplifier) having a digital connector, 2. an audio component having a built-in decoder (Dolby Digital or DTS), 3. a DAT or MD via the DIGITAL OUT OPTICAL or COAXIAL connector using an optical or coaxial digital connecting cord. For connection details, see pages 10 and 12.

When you select "ON," set "DOLBY DIGITAL" and "DTS."



DOLBY DIGITAL

Selects the Dolby Digital signals to be output via the DIGITAL OUT OPTICAL and COAXIAL connectors. You cannot select this item when you set "DIGITAL OUT" to "OFF."

- D-PCM (Downmix PCM): when the player is connected to an audio component lacking a built-in Dolby Digital decoder. If you play Dolby Digital sound tracks, the output audio signals are mixed down to 2 channels. You can select whether the signals conform to Dolby Surround (Pro Logic) or not by making adjustments to the "DOWNMIX" item in "AUDIO SETUP."
- DOLBY DIGITAL: when the player is connected to an audio component with a built-in Dolby Digital decoder. If the player is connected to an audio component lacking a built-in Dolby Digital decoder, do not set this. Otherwise, when you play the Dolby Digital sound track, a loud noise or no sound will come out from the speakers, affecting your ears or causing the speakers to be damaged.

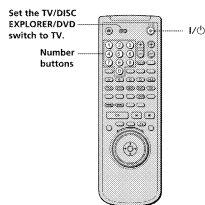
Note

When you select "D-PCM," set Virtual Enhanced Surround (VES) to "QEF." Otherwise, the player will not output signals from the DIGITAL OUT OPTICAL or COAXIAL connector.

Controlling Your TV or AV Receiver (Amplifier) with the Supplied Remote

By adjusting the remote signal, you can control your TV or AV receiver (amplifier) with the supplied remote.

Controlling TVs with the remote



- Slide the TV/DISC EXPLORER/DVD switch to TV.
- Hold down I/O, and enter your TV's manufacturer's code (see the table) using the number buttons.
- Release I/O.

Code numbers of controllable TVs

If more than one code number is listed, try entering them one at a time until you find the one that works with your TV.

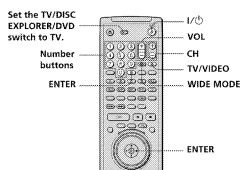
Manufacturer	Code number	Manufacturer	Code number
Sony (default)	01	Panasonic	06,19
Akal	04	Philco	03,04
AOC	04	Philips	08
Certron	12	Pioneer	16
Coronado	03	Portland	03
Curtis-Mathes	12	Quasar	06,18
Daytron	12	Radio Shack	05,14
Emerson	03,04,14	RCA	04,10
Fisher	11	Sampo	12
General Electric	06,10	Sanyo	11
Gold Star	03,04,17	Scott	12
Hitachi	02,03	Sears	07,10,11
J.C. Penney	04,12	Sharp	03,05,18
JVC	09	Sylvania	08,12
KMC	03	Teknika	03,08,14
Magnavox	03,08,12	Toshiba	07
Marantz	04,13	Wards	03,04,12
MG&A/Mitsubishi	04,12,13,17	Yox	12
NEC	04,12	Zenith	15

Notes

- If you enter a new code number, the code number previously entered will be erased.
- When you replace the batteries of the remote, the code number may be reset to the default setting. Reset the appropriate code number.

Controlling the TV

When you set the TV/DISC EXPLORER/DVD switch to TV, you can control your TV using the buttons below.



By pressing	You can
I/O	Turn the TV on or off
TV/VIDEO	Switch the TV's input source between the TV and other input sources
VOL	Adjust the volume of the TV
CH	Select the channel of the TV
WIDE MODE	Switch the wide picture on or off
Number buttons and ENTER	Select the channel of the TV

Note

Depending on the TV, you may not be able to control your TV or to use some of the buttons above.

Controlling AV receivers (amplifiers) with the remote



- Slide the TV/DISC EXPLORER/DVD switch to DVD.
- Hold down I/O, and enter your AV receiver's manufacturer's code (see the table) using the number buttons.

3 Release I/O.

Code numbers of controllable AV receivers (amplifier)

If more than one code number is listed, try entering them one at a time until you find the one that works with your AV receiver (amplifier).

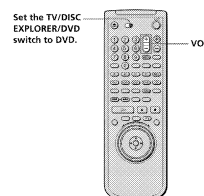
Manufacturer	Code number
Sony	91 (default), 89
Denon	84, 85, 86
Kenwood	92, 93
Onkyo	81, 82, 83
Pioneer	99
Sansui	87
Technics	97, 98
Yamaha	94, 95, 96

Notes

- If you enter a new code number, the code number previously entered will be erased.
- When you replace the batteries of the remote, the code number may be reset to the default setting. Reset the appropriate code number.

Controlling the AV receiver (amplifier)

When you set the TV/DISC EXPLORER/DVD switch to DVD, you can change the volume of the AV receiver (amplifier) using VOL.



Note

Depending on the AV receiver (amplifier), you may not be able to control your AV receiver (amplifier).

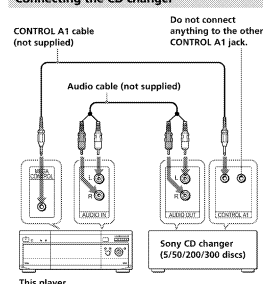
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Controlling the CD Changer (Mega Control)

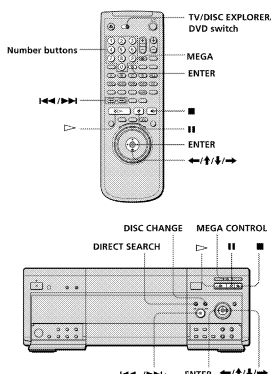
You can control a Sony CD changer of 5/50/200/300 discs connected to the MEGA CONTROL jack of the player.

Connecting the CD changer



Controlling the CD changer

The controls indicated below are effective while the MEGA CONTROL button is lit.



- Set the command mode selector of the CD changer to "CD 3."
- Set the TV/DISC EXPLORER/DVD switch on the remote to DISC EXPLORER or DVD.
- Turn on the player and the CD changer.
- Press MEGA CONTROL on the player or MEGA on the remote.
The MEGA CONTROL button on the front panel lights up and the display shows the current disc number in the CD changer.
- Select the play mode you want on the CD changer.
- Press > on the player to start playing.
Playback starts and the display shows the current disc and track numbers and the playing time of the track. While the MEGA CONTROL button on the front panel is lit, you can control the CD changer with the controls on the player as follows:

To	Operation
Select a disc during playback	Press the number button on the remote and ENTER, or < / > and ENTER, or turn the click shuttle slowly and press ENTER. Or press DISC CHANGE to turn the indicator on followed by turning the < / > dial and then pressing it.
Skip by 10 discs in continuous play mode	Press < / > and then press ENTER.
Stop	Press ■.
Pause	Press II.
Resume play after pause	Press II or >.
Go to the next track during playback	On the player: Press DIRECT SEARCH to turn it on and turn the < / > dial clockwise. On the remote: Press >.
Go back to the preceding track during playback	On the player: Press DIRECT SEARCH to turn it on and turn the < / > dial counterclockwise. On the remote: Press <.

To control the player again

Press MEGA CONTROL on the player or MEGA on the remote.
The MEGA CONTROL button on the player turns off and you can control the player.

Notes

- Connect only a Sony 5/50/200/300 CD changer to the MEGA CONTROL jack.
- You cannot locate a particular point on a CD's track using the controls on the player.
- Depending on the CD changer, some controls on the player may not operate the CD changer as they do the player.
- You cannot control the player when the MEGA CONTROL button on the front panel is lit.
- The player will not enter Resume Play after the MEGA CONTROL button on the front panel has been turned on and off.
- You cannot control the CD changer right after turning on the player or connecting the CD changer. Wait a few seconds until the player recognizes the CDs.
- When the MEGA CONTROL button is lit, you cannot use the Control Menu and Disc Explorer.

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Additional Information

Troubleshooting

If you experience any of the following difficulties while using the player, use this troubleshooting guide to help remedy the problem. Should any problem persist, consult your nearest Sony dealer.

Power

The power is not turned on.

- ➔ Check that the AC power cord is connected securely.

Picture

There is no picture.

- ➔ Check that the player is connected securely.
- ➔ The video connecting cord is damaged. Replace it with a new one.
- ➔ Make sure you connect the player to the video input connector on the TV. (page 8)
- ➔ Make sure you turn on the TV.
- ➔ Make sure you select the video input on the TV so that you can view the pictures from the player.

Picture noise appears.

- ➔ Clean the disc.
- ➔ If the video signal from your DVD player has to go through your VCR to get to your TV, the copy-protection applied to some DVD programs could affect picture quality. If you still experience problems after checking your connections, please try connecting your DVD player directly to your TV's S-input. If your TV is equipped with this input. (page 8)

Even though you set the aspect ratio in "TV TYPE" in "SCREEN SETUP" of the setup display, the picture does not fill the screen.

- ➔ The aspect ratio is fixed on your DVD.

Sound

There is no sound.

- ➔ Check that the player is connected securely.
- ➔ The audio connecting cord is damaged. Replace it with a new one.
- ➔ Make sure you connect the player to the audio input connectors on the receiver (amplifier). (page 10)
- ➔ Make sure you turn on the TV and the receiver (amplifier).
- ➔ Make sure you select the appropriate input on the receiver (amplifier) so that you can listen to the sound from the player.
- ➔ The player is in pause mode or in Slow-motion Play mode. Press \square to return to normal play mode.
- ➔ The player is in fast forward or fast reverse mode. Press \triangleright to return to normal play mode.
- ➔ If you use the DIGITAL OUT connectors, set "DIGITAL OUT" to "ON" in the setup display. Otherwise no sound will come from the DIGITAL OUT connectors. (page 70)
- ➔ You selected a VES mode other than "OFF" in the Control Menu display when you connected the component via the DIGITAL OUT OPTICAL or COAXIAL connector. Set "YES" to "OFF" in the Control Menu display. (page 47)
- ➔ When you play DTS sound tracks, sound will only come out from the DIGITAL OUT OPTICAL or COAXIAL connector. (page 20)

Sound is noisy.

- ➔ Clean the disc.
- ➔ When you play a CD with DTS sound tracks, noise will come from any connector other than the DIGITAL OUT OPTICAL or COAXIAL connector. (page 20)

Sound distortion occurs.

- ➔ In the setup display, set "AUDIO ATT" in "AUDIO SETUP" to "ON." (page 70)

The sound loses its stereo effect when you play a VIDEO CD or a CD.

- ➔ Set "AUDIO" to "STEREO" in the Control Menu display. (page 43)
- ➔ Make sure you connect the player correctly. (pages 8, 10, 12)

The surround effect is difficult to hear when you are playing a Dolby Digital or DTS sound track.

- ➔ Depending on the DVD, the output signal may not be the entire 5.1 channels. It may be monaural or stereo even if the sound track is recorded in Dolby Digital or DTS format.

Operation

The remote does not function.

- ➔ Remove any obstacles between the remote and the player.
- ➔ Use the remote near the player.
- ➔ Point the remote at the remote sensor \blacksquare on the player.
- ➔ Replace all of the batteries in the remote with new ones if they are weak.
- ➔ The TV/DISC EXPLORER/DVD switch is not in the correct position.

The disc does not play.

- ➔ There is no disc inside ("Insert disc." appears on the TV screen).
- ➔ Insert a disc.
- ➔ Insert the disc correctly with the playback side facing left into the disc slot.
- ➔ Clean the disc.
- ➔ The player cannot play CD-ROMs, etc. (page 5)
- ➔ Insert a DVD, a VIDEO CD, or a CD.
- ➔ Check the region code of the DVD. (page 4)
- ➔ Moisture has condensed inside the player. Remove the disc and leave the player turned on for about half an hour. (page 6)
- ➔ The selected disc is not included in the current folder.

The player does not play from the beginning when playing a disc.

- ➔ Program Play, Shuffle Play, Repeat Play or A-B Repeat Play has been selected. Press CLEAR. (pages 52 through 57)
- ➔ Resume Play has been selected.
- ➔ Press \blacksquare on the front panel or on the remote before you start playing. (page 23)
- ➔ A title menu or a DVD menu automatically appears on the TV screen when you play your DVD, or a setup display automatically appears on the TV screen when you play your VIDEO CD with PBC functions.

Troubleshooting

The player starts playing the disc automatically.

- ➔ The DVD features the auto playback function.
- ➔ "AUTO PLAY" in "CUSTOM SETUP" is set to "TIMER." (page 65)

Playback stops automatically.

- ➔ The disc may contain an auto pause signal. While playing such a disc, the player stops playback at the signal.

You cannot perform some functions such as Stop, Search, Slow-motion Play, Repeat Play, Shuffle Play or Program Play.

- ➔ Depending on the disc, you may not be able to do some of the operations above.

Messages do not appear on the TV screen in the language you want.

- ➔ In the setup display, select the desired language for the on-screen display in "OSD" under "LANGUAGE SETUP." (page 63)

The language for the sound track cannot be changed when you play a DVD.

- ➔ Multilingual tracks are not recorded on the DVD.
- ➔ Changing the language for the track is prohibited on the DVD.

The subtitle language cannot be changed when you play a DVD.

- ➔ Multilingual subtitles are not recorded on the DVD.
- ➔ Changing the language for the subtitles is prohibited on the DVD.

The subtitles cannot be turned off when you play a DVD.

- ➔ Depending on the DVD, you may not be able to turn the subtitles off.

The angles cannot be changed when you play a DVD.

- ➔ Multi-angles are not recorded on the DVD.
- ➔ Change the angles when "ANGLE" appears on the front panel display. (page 26)
- ➔ Changing the angles is prohibited on the DVD.

The player does not operate properly.

- ➔ Static electricity, etc., may affect the player's operation.
- ➔ Press \square on the player to turn the player off and then on again.

Nothing is displayed on the front panel display.

- ➔ Press DIMMER on the player. (page 26)
- ➔ In the set up display, "DIMMER" in "CUSTOM SETUP" is set to "OFF."
- ➔ Set "DIMMER" to "BRIGHT" or "DARK." (page 65)

The sound does not come from the CD changer connected using the CONTROL A1 cable

- ➔ Turn on the player.
- ➔ Press the MEGA CONTROL button on the front panel. (page 74)

5 numbers or letters are displayed on the screen and on the front panel display.

- ➔ The self-diagnosis function was activated. See the table on page 79.

The front cover does not open and "LOCKED" is displayed on the front panel display.

- ➔ Contact your Sony dealer or local authorized Sony service facility.

The FLIP button does not operate.

- ➔ The disc you are trying to flip does not have a side B.

Self-diagnosis function

When the self-diagnosis function activates to prevent the player from malfunctioning, a five-character service number (combination of a letter and digits) flashes on the screen and on the front panel display. In this case, check the following table.



First three characters	Cause and/or Corrective Action
C13	<ul style="list-style-type: none">• The disc is dirty.➔ Clean the disc with a cleaning cloth. (page 6)• The disc is not facing the correct direction.➔ Place the disc in the slot so that the playing side is facing left.
C31	<ul style="list-style-type: none">• The front cover will not open or close all the way.➔ Remove any objects that may be blocking the movement of the front cover.
Exx (xx is any number)	<ul style="list-style-type: none">• To prevent a malfunction, the player has performed the self-diagnosis function. The front cover automatically opens and the player enters standby mode.➔ When you contact your Sony dealer or local authorized Sony service facility, remove all of the discs in the player and give the 5-character service number. (example E-6:10)

DTS (pages 12, 71)
Digital audio compression technology that Digital Theater Systems, Inc. developed. This technology conforms to 5.1-channel surround. The rear channel is stereo and there is a discrete subwoofer channel in this format. DTS provides the same 5.1 discrete channels of high quality digital audio. Good channel separation is realized because all of the channel data is recorded discretely and processed in digital.

Title (page 5)
The longest section of a picture or a music piece on a DVD; a movie, etc., for a picture piece on video software; or an album, etc., for a music piece on audio software. Each title is assigned a title number enabling you to locate the title you want.

VIDEO CD (page 4)

A compact disc that contains moving pictures. The picture data uses the MPEG 1 format, one of the worldwide standards of digital compression technology. The picture data is compressed to about 1/140 of its original size. Consequently, a 12cm VIDEO CD can contain up to 74 minutes of moving pictures.

VIDEO CDs also contain compact audio data. Sounds outside the range of human hearing are compressed while the sounds we can hear are not compressed. VIDEO CDs can hold 6 times the audio information of conventional audio CDs.

There are 2 versions of VIDEO CDs.

- Version 1.1: You can play only moving pictures and some audio.
- Version 2.0: You can play high-resolution still pictures and enjoy PBC functions.

This player conforms to both versions.

81

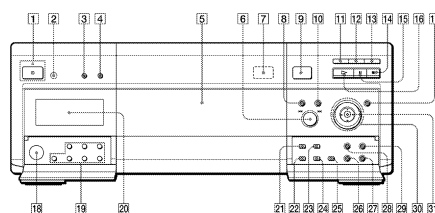
For details, see pages 45, 63.

The language spellings conform to the ISO 639:1988 (E/F) standard

Code	Language	Code	Language	Code	Language	Code	Language
1027	Afar	1186	Scotts Gaelic	1350	Malayalam	1513	Siswati
1028	Abkhazian	1194	Galician	1352	Mongolian	1514	Sesotho
1032	Afrikaans	1196	Guarani	1353	Moldavian	1515	Sundanese
1039	Amlhric	1203	Gujarati	1356	Marathi	1516	Swedish
1044	Arabic	1209	Hausa	1357	Malay	1517	Swahili
1045	Assamese	1217	Hindi	1358	Maltese	1521	Tamil
1051	Aymara	1226	Croatian	1363	Burmese	1525	Telugu
1052	Azerbaijani	1229	Hungarian	1365	Nauru	1527	Tajik
1053	Boshrk	1233	Armenian	1369	Nepoli	1528	Thai
1057	Byelorussian	1235	Interlingua	1376	Deutch	1529	Tigrinya
1059	Bulgarian	1239	Interlingue	1379	Norwegian	1531	Turkmeni
1060	Bihari	1245	Irupiak	1393	Occitan	1532	Tadaglog
1061	Bislama	1248	Indonesian	1403	(Afan) Oromo	1534	Setswana
1066	Bengali; Bangla	1253	Icelandic	1408	Oriya	1535	Tonga
1067	Tibetan	1254	Italian	1417	Punjabi	1538	Turkish
1070	Breton	1257	Hebrew	1428	Polish	1539	Tsonga
1079	Catalan	1261	Japanese	1435	Pashto; Pushto	1540	Tatar
1093	Corsican	1269	Yiddish	1436	Portuguese	1543	Twi
1097	Czech	1283	Javanese	1463	Quechua	1547	Ukrainian
1103	Welsh	1287	Georgian	1481	Rhaeto-Romanche	1564	Urdu
1105	Danish	1297	Kazakh	1482	Kirundi	1572	Uzbek
1109	German	1298	Greenlandic	1483	Romanian	1581	Vietnamese
1130	Bhutani	1299	Cambodian	1489	Russian	1587	Volapük
1142	Greek	1300	Karnata	1491	Kirinyawanda	1613	Wolof
1144	English	1301	Korean	1495	Sanskriti	1632	Xhosa
1145	Esperanto	1305	Koshmiri	1498	Sindhi	1665	Yoruba
1149	Spanish	1307	Kurdish	1501	Sergbo	1684	Chinese
1150	Estonian	1311	Kirghiz	1502	Serbo-Croatian	1697	Zulu
1151	Basque	1313	Latin	1503	Singhalese	1705	Not specified
1157	Persian	1326	Lingala	1505	Slovak		
1165	Finnish	1327	Laotian	1506	Slovenian		
1166	Fiji	1332	Lithuanian	1507	Samoean		
1171	Faroese	1334	Latvian; Lettish	1508	Shona		
1174	French	1345	Malagasy	1509	Somali		
1181	Frisian	1347	Maori	1511	Albanian		
1183	Irish	1349	Macedonian	1512	Serbian		

Refer to the pages indicated in parentheses for details

Front Panel



- 1** **⏻ (power) button and indicator (19)**
Disconnects the power of the player or places the player in standby mode.
 - 2** **⏮ (remote sensor) (7)**
Accepts the remote control signals.
 - 3** **DIMMER button and indicator (26)**
Press to change the brightness of the front panel display and the indicators on the front panel. The DIMMER indicator lights up when the front panel is off.
 - 4** **VES button and indicator (47)**
Press to select the desired "VES" item. The indicator lights up for every selected item except "OFF."
 - 5** **Disc compartment (16)**
Insert discs in the disc slots.
 - 6** **⏮-▶-⏭ dial (15, 19, 20)**
When the DIRECT SEARCH indicator is lit, turn to go to the next chapter or track or to go back to the previous chapter or track.
When the DISC CHANGE indicator is lit, turn to rotate the DISC slot or select disc.
 - 7** **SELECT button (18)**
Press to remove the disc from the disc slot.
 - 8** **DIRECT SEARCH button and indicator (20)**
Press to use the ⏮-▶-⏭ dial to locate the chapter or track.
 - 9** **OPEN/CLOSE button (16)**
Opens or closes the front cover.
 - 10** **DISC CHANGE button and indicator (16, 19)**
Press to use the ⏮-▶-⏭ dial to rotate the disc slots or select disc.
 - 11** **EASY PLAY button and indicator (17)**
Press to play the EASY PLAY disc or bring the EASY PLAY slot to the loading position.
 - 12** **MEGA CONTROL button and indicator (74)**
Press to control the connected CD changer.
 - 13** **FLIP button and indicator (21)**
Press to turn over the disc.
 - 14** **■ (stop) button (20, 23)**
Stops playing a disc.
 - 15** **⏸ (pause) button (20)**
Pauses playing a disc.
 - 16** **▶-▶ (play) button (19)**
Plays a disc.
 - 17** **JOG button and indicator (22)**
Press to play a disc frame by frame.
 - 18** **KEYBOARD jack (34)**
Connect a keyboard to label the discs.
 - 19** **FOLDER buttons (29)**
Selects a disc folder.
 - 20** **Front Panel Display (26)**
Indicates the playing time, etc.
 - 21** **REPEAT button (56)**
Each time you press this button, the "REPEAT" setting changes.
 - 22** **LOAD button (28)**
Reads the information of the discs loaded in sequence.
 - 23** **SHUFFLE button (55)**
Each time you press this button, the "SHUFFLE" setting changes.

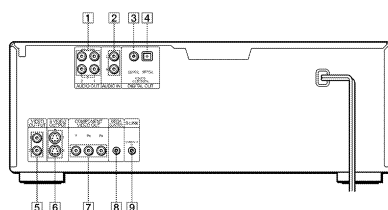
continued to the next page

Index to Parts and Controls

- 24 TIME/TEXT button (26, 41, 43)**
Displays the playing time of the disc, etc., on the front panel display.
- 25 1/ALL DISCS button (51)**
Selects 1 DISC or ALL DISCS play mode.
- 26 DISPLAY button (37)**
Displays the Control Menu display on the TV screen to set or adjust the Control Menu items.
- 27 RETURN button (25, 29, 38)**
Press to return to the previously selected screen, etc.
- 28 TITLE button (24)**
Displays the title menu on the TV screen.

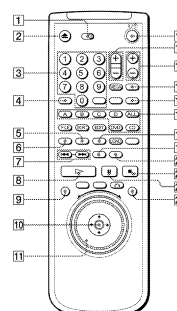
- 29 DVD MENU button (25)**
Displays the DVD menu on the TV screen.
- 30 Click shuttle (22)**
Changes the playback speed.
- 31 ENTER button**
Selects and executes the items or settings.

Rear Panel



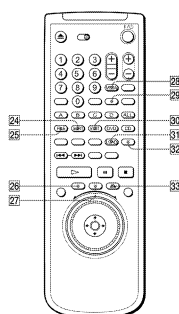
- 1 AUDIO OUT R (right)/L (left) 1/2 connectors (8, 10)**
Connect to the audio input connector on your TV or receiver (amplifier).
- 2 AUDIO IN (L, R) connectors (74)**
Connect to the audio output on a Sony CD changer of 5/50/200/300 discs.
- 3 DIGITAL OUT COAXIAL connector (10, 13)**
Connect to an audio component using a coaxial digital connecting cord.
- 4 DIGITAL OUT OPTICAL connector (10, 13)**
Connect to an audio component using an optical digital connecting cord. Take off the cap.
- 5 VIDEO OUTPUT 1/2 connectors (8)**
Connect to the video input connector on your TV or monitor.
- 6 S VIDEO OUTPUT 1/2 connectors (8, 10, 13)**
Connect to the S video input connector on your TV or monitor.
- 7 COMPONENT VIDEO OUT connectors (9)**
Connects to a monitor or projector having component video input connectors (Y, Pb, Pr) that conform to output signals from the player.
- 8 MEGA CONTROL connector (74)**
Connect to the control connector on a Sony CD changer of 5/50/200/300 discs.
- 9 S-LINK (CONTROL S IN) connector (8)**
Connect to the S-LINK (CONTROL S) connector on an external component.

Remote



- 1 TV/DISC EXPLORER/DVD switch (28, 72, 73)**
Selects to control the player, the Disc Explorer or the TV with the remote.
- 2 OPEN/CLOSE button (20)**
Opens or closes the front cover.
- 3 Number/ENTER buttons**
Selects and executes the items or settings.
- 4 CLEAR button (53 through 57)**
Press to return to continuous play, etc.
- 5 PROGRAM button (53)**
Displays the "PROGRAM" display on the TV screen.
- 6 SHUFFLE button (54)**
Each time you press this button, the "SHUFFLE" setting changes.
- 7 PREV/NEXT (previous/next) buttons (20)**
Press to go to the next chapter or track, or to go back to the previous chapter or track.
- 8 PLAY button (19)**
Plays a disc.
- 9 DISPLAY button (37)**
Displays the Control Menu display on the TV screen to set or adjust the Control Menu items.
- 10 ENTER buttons**
Selects and executes the items or settings.
- 11 Click shuttle (22, 32)**
Changes the playback speed, or selects characters.
- 12 I/O (on/standby) button (19)**
Press to turn on the player or place it in standby mode after power is connected by pressing 1 on the player.
- 13 VOL +/- buttons (73)**
When 1 is set to DISC EXPLORER or DVD, controls the AV receiver (amplifier) volume.
When 1 is set to TV, controls the TV volume.
- 14 CH/DISC SKIP +/- buttons (20, 73)**
When 1 is set to DISC EXPLORER or DVD, searches the discs in the folder (DISC SKIP).
When 1 is set to TV, changes the TV channel (CH).
- 15 TV/VIDEO button (73)**
Switches the TV's input.
- 16 FLIP button (21)**
Press to turn over the disc.
- 17 FOLDER buttons (29)**
Selects a disc folder.
- 18 REPEAT button (56)**
Each time you press this button, the "REPEAT" setting changes.
- 19 PICTURE MEMORY button (65)**
Press to store a picture in memory.
- 20 BOOKMARK button (59)**
Press to set a bookmark.
- 21 STOP button (20, 23)**
Stops playing a disc.
- 22 PAUSE button (20)**
Pauses playing a disc.
- 23 JOG button and indicator (22)**
Press to play a disc frame by frame.

Index to Parts and Controls



- 24 ANGLE/SORT button (35, 46)**
When 1 is set to DVD or TV, changes the angles when playing a DVD (ANGLE).
When 1 is set to DISC EXPLORER, enters the SORT mode (SORT).
- 25 AUDIO/FILE button (30, 44)**
When 1 is set to DVD or TV, changes the sound while playing a DVD or VIDEO CD (AUDIO).
When 1 is set to DISC EXPLORER, enters the FILE mode (FILE).
- 26 TITLE button (24)**
Displays the title menu on the TV screen.
- 27 DVD MENU button (25)**
Displays the DVD menu on the TV screen.
- 28 WIDE MODE/MEGA button (73, 74)**
When 1 is set to TV, switches the wide picture on or off (WIDE MODE).
When 1 is set to DVD or DISC EXPLORER, press to control the connected CD changer (MEGA).
- 29 TIME/TEXT button (26, 41, 43)**
Displays the playing time of the disc, etc., on the front panel display.
- 30 SUBTITLE/EDIT button (32, 45)**
When 1 is set to DVD or TV, displays the SUBTITLE display on the TV screen (SUBTITLE).
When 1 is set to DISC EXPLORER, enters the EDIT mode to label the disc (EDIT).

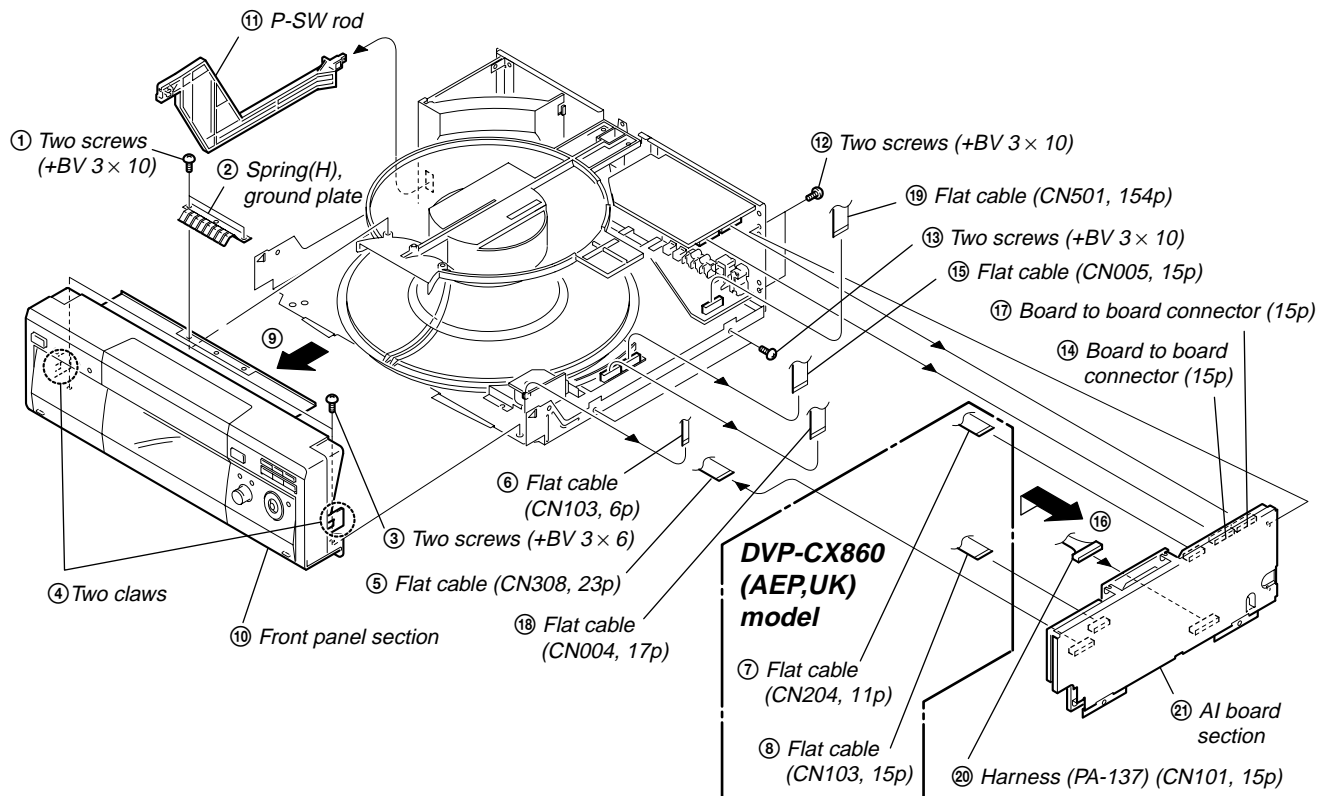
- 31 1/ALL DISCS/LOAD button (28, 51)**
When 1 is set to DVD or TV, selects 1 DISC or ALL DISCS play mode (1/ALL DISCS).
When 1 is set to DISC EXPLORER, reads the information of the discs loaded in sequence (LOAD).
- 32 EASY PLAY button (17)**
Press to play the EASY PLAY disc or bring the EASY PLAY slot to the loading position.
- 33 RETURN button (25, 29, 38)**
Press to return to the previously selected screen, etc.

MEMO

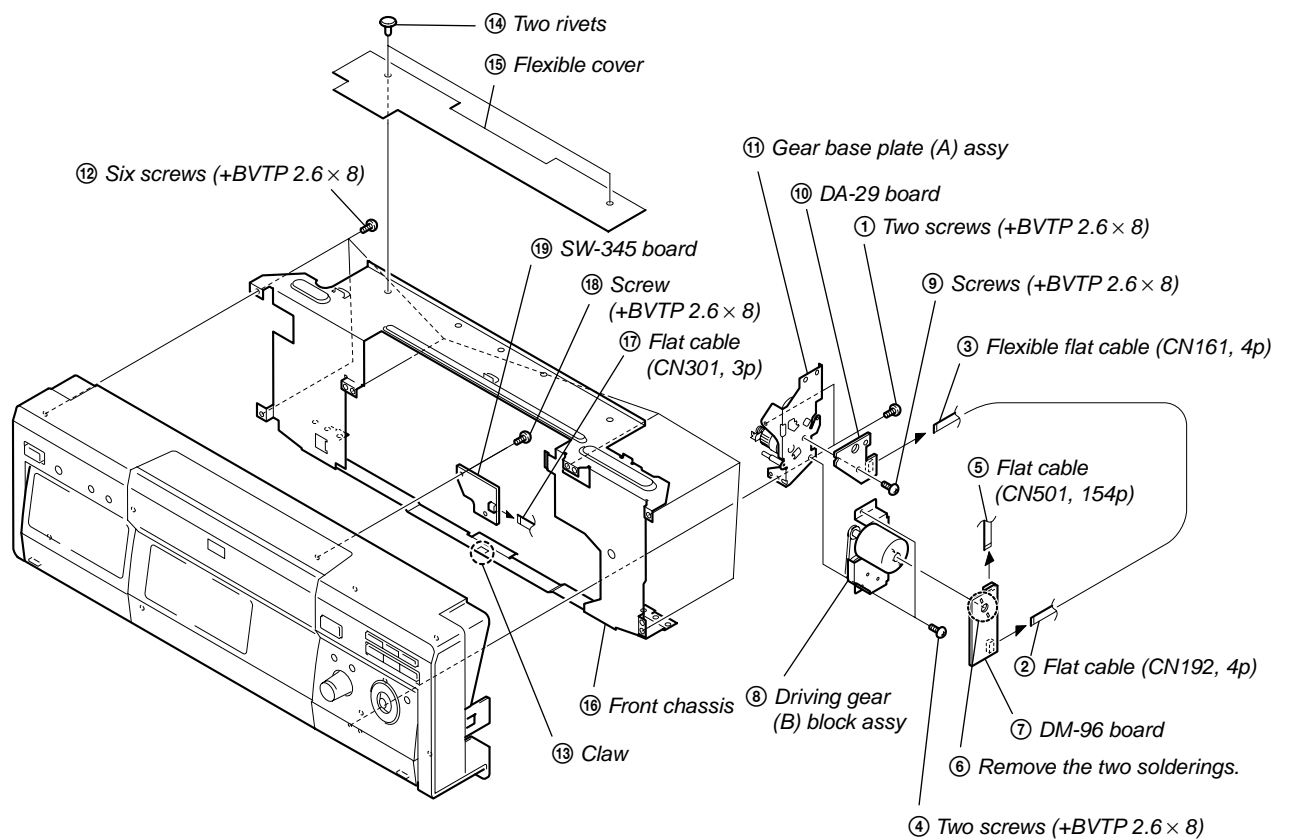
SECTION 2 DISASSEMBLY

NOTE: Follow the disassembly procedure in the numerical order given.

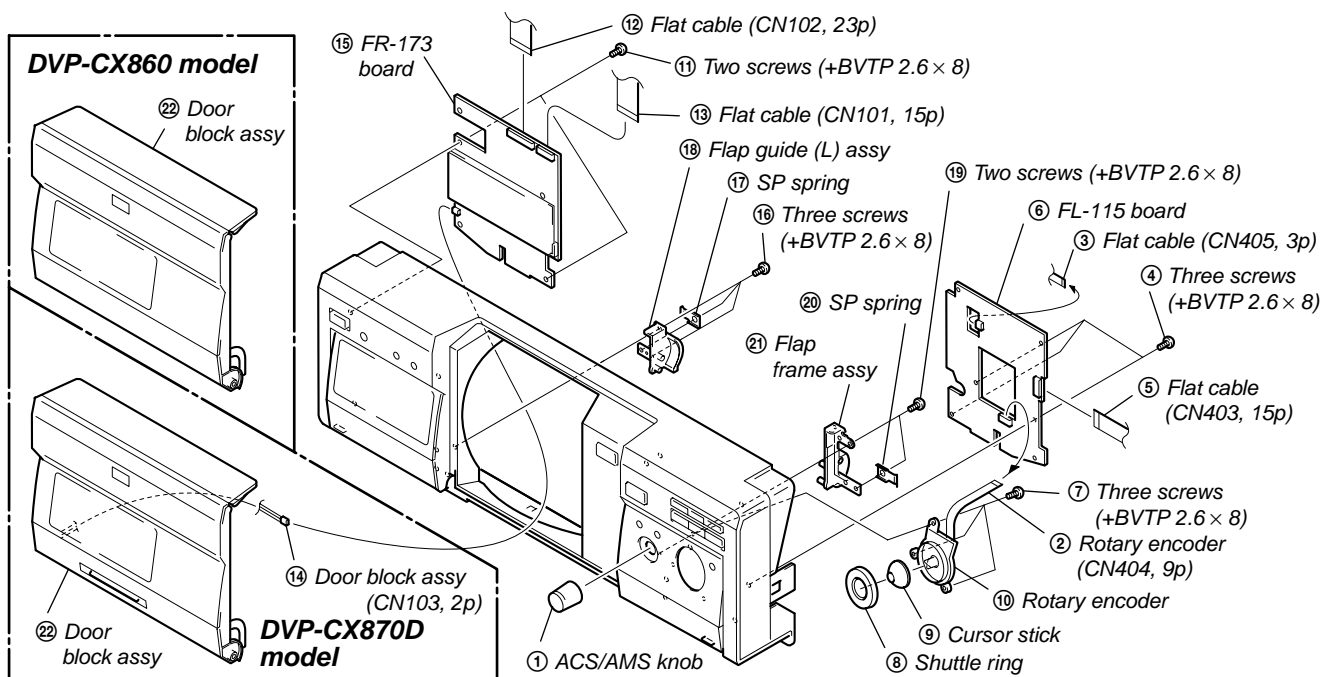
2-1. OVERALL



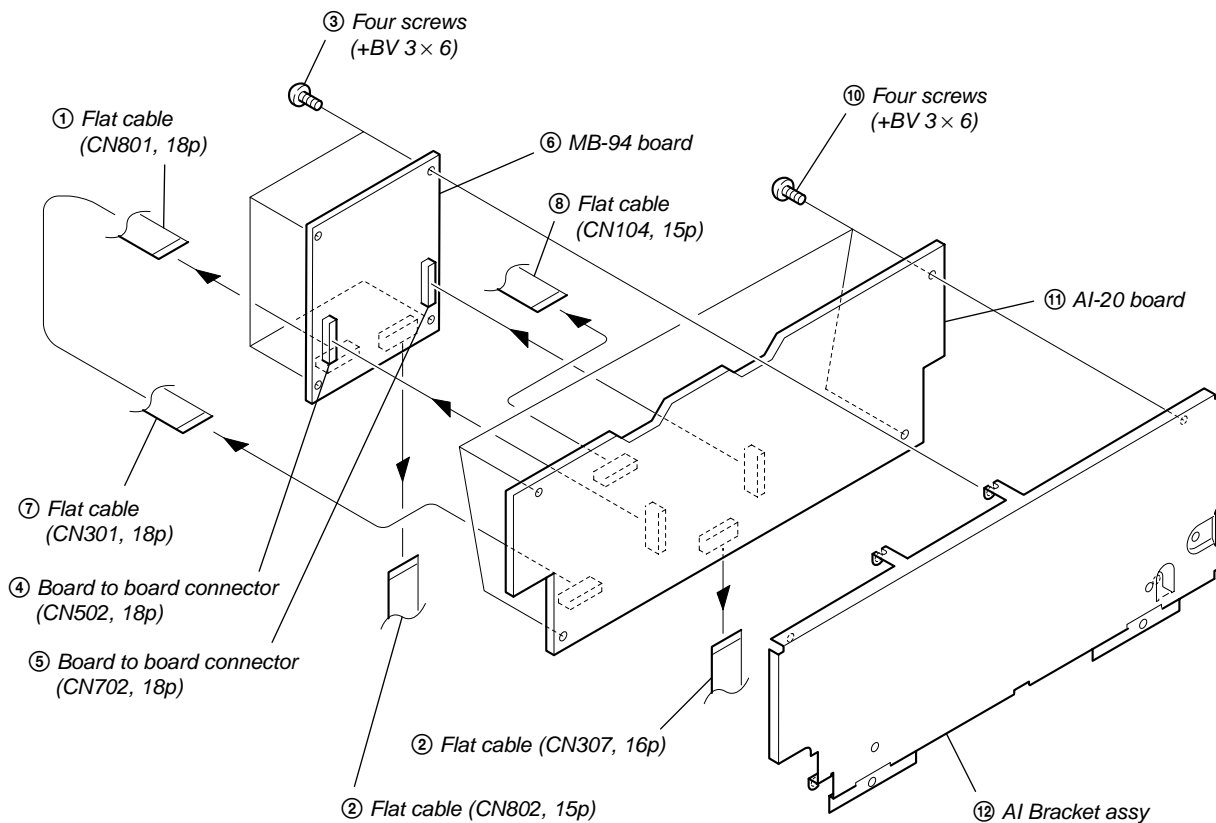
2-2. FRONT PANEL-1



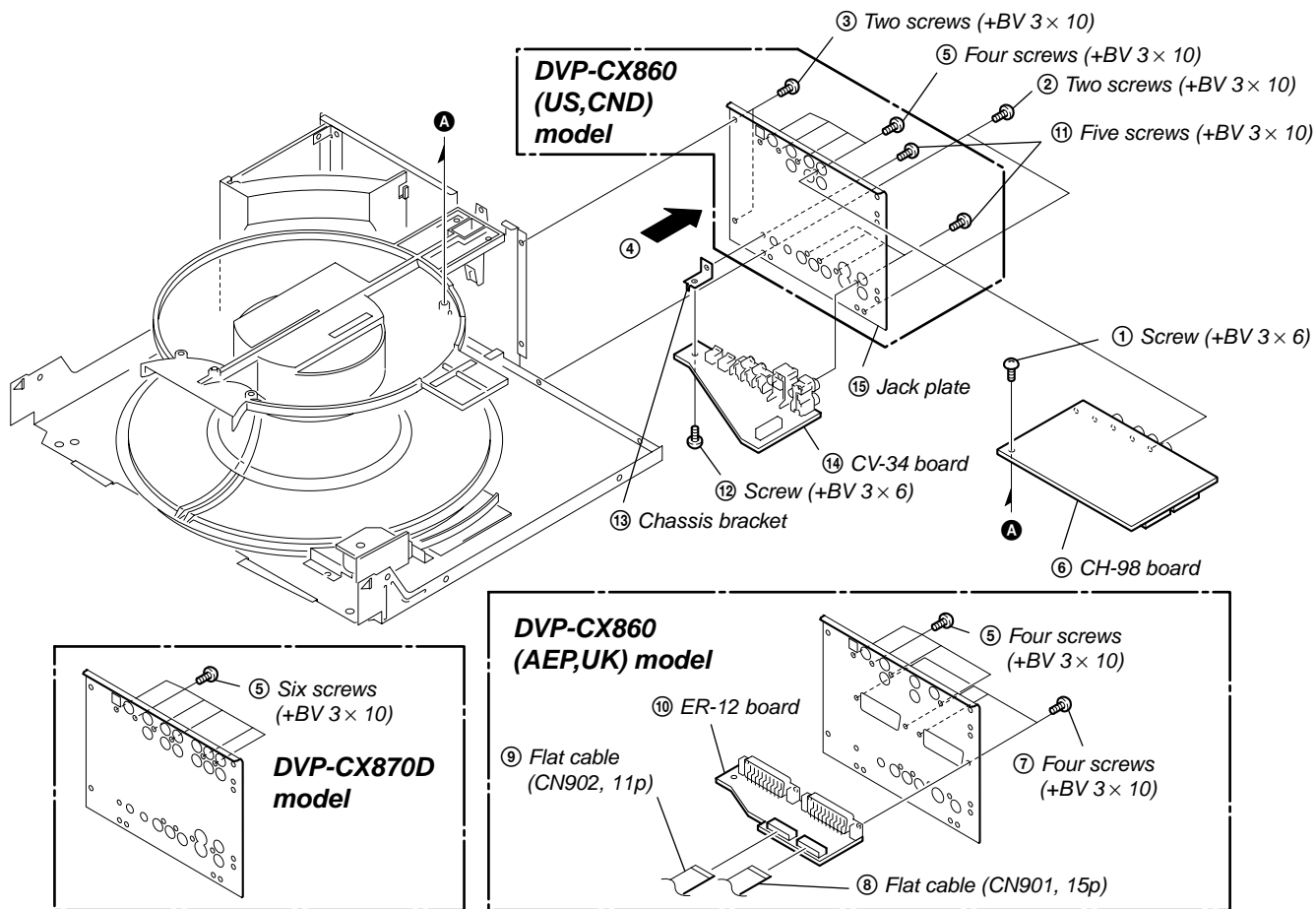
2-3. FRONT PANEL-2



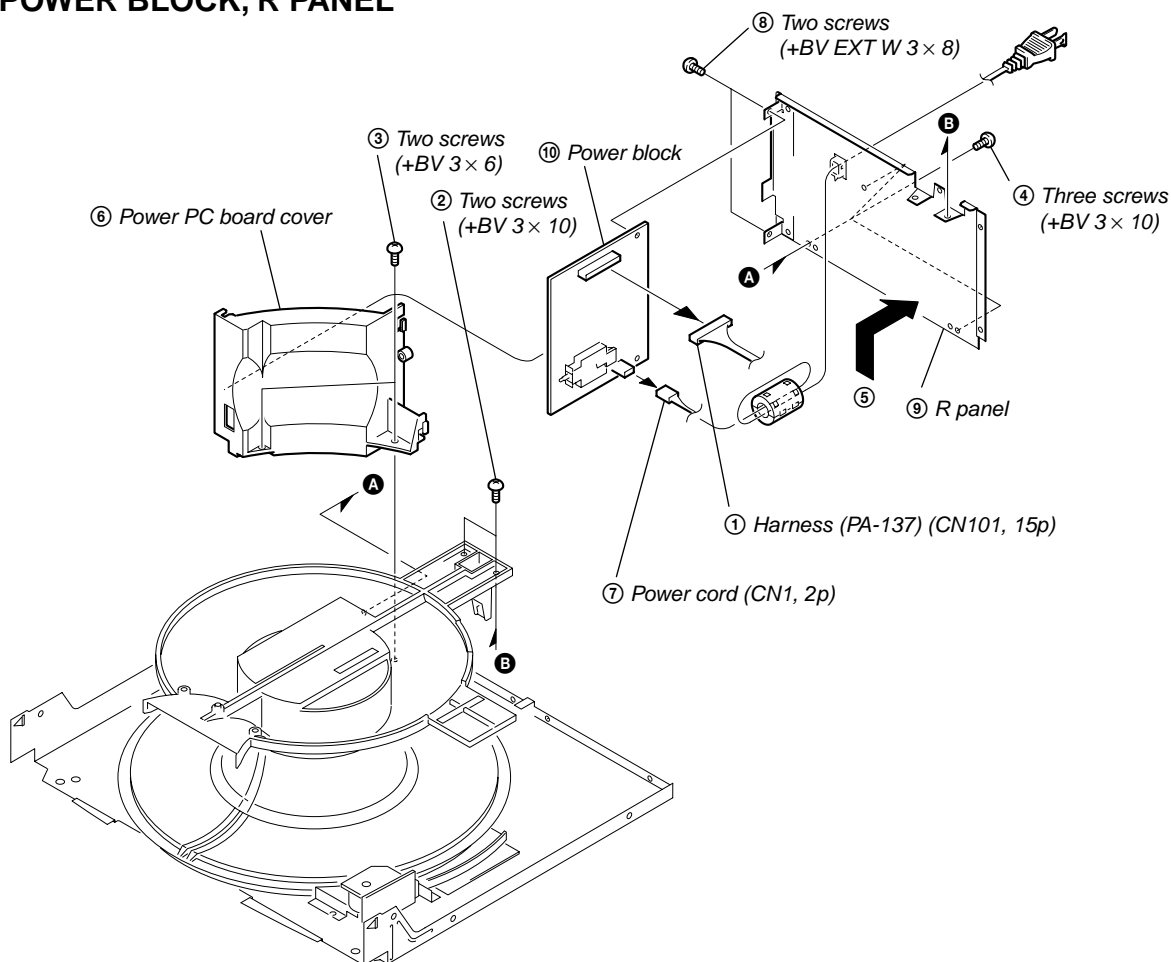
2-4. AI-20, MB-94 BOARDS



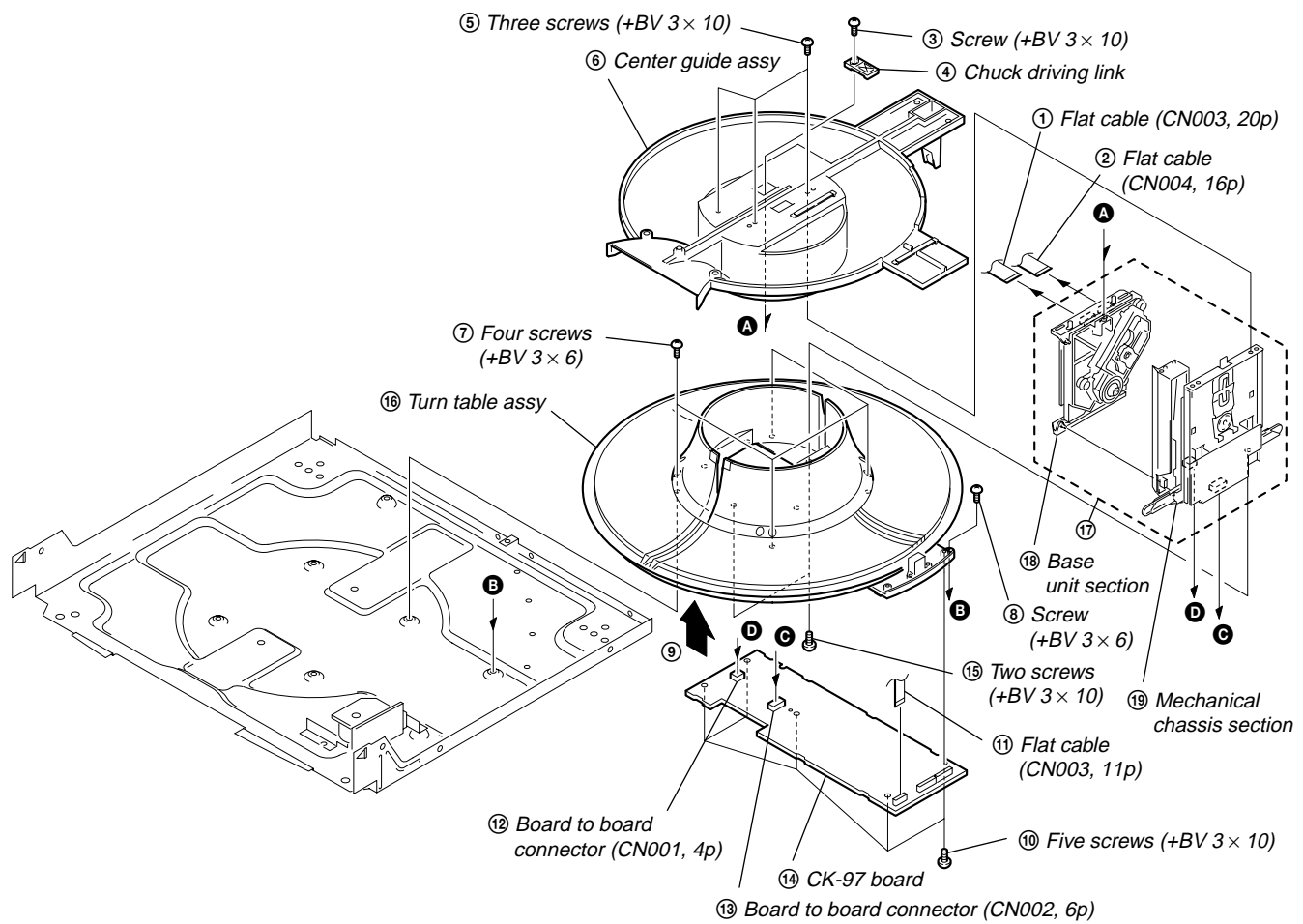
2-5. JACK PLATE, CV-34 BOARD



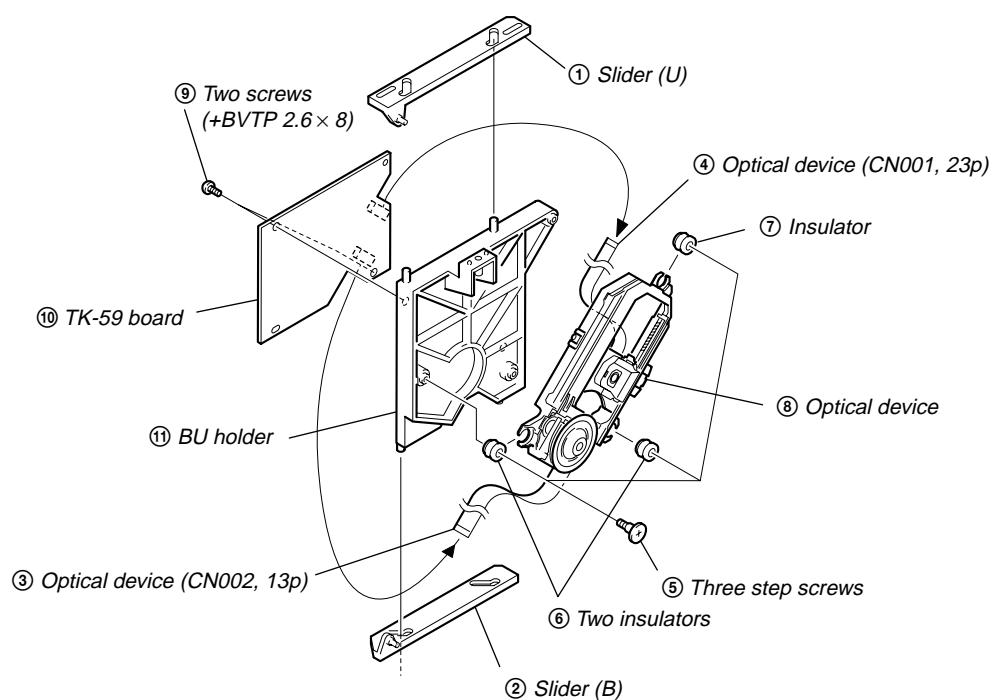
2-6. POWER BLOCK, R PANEL



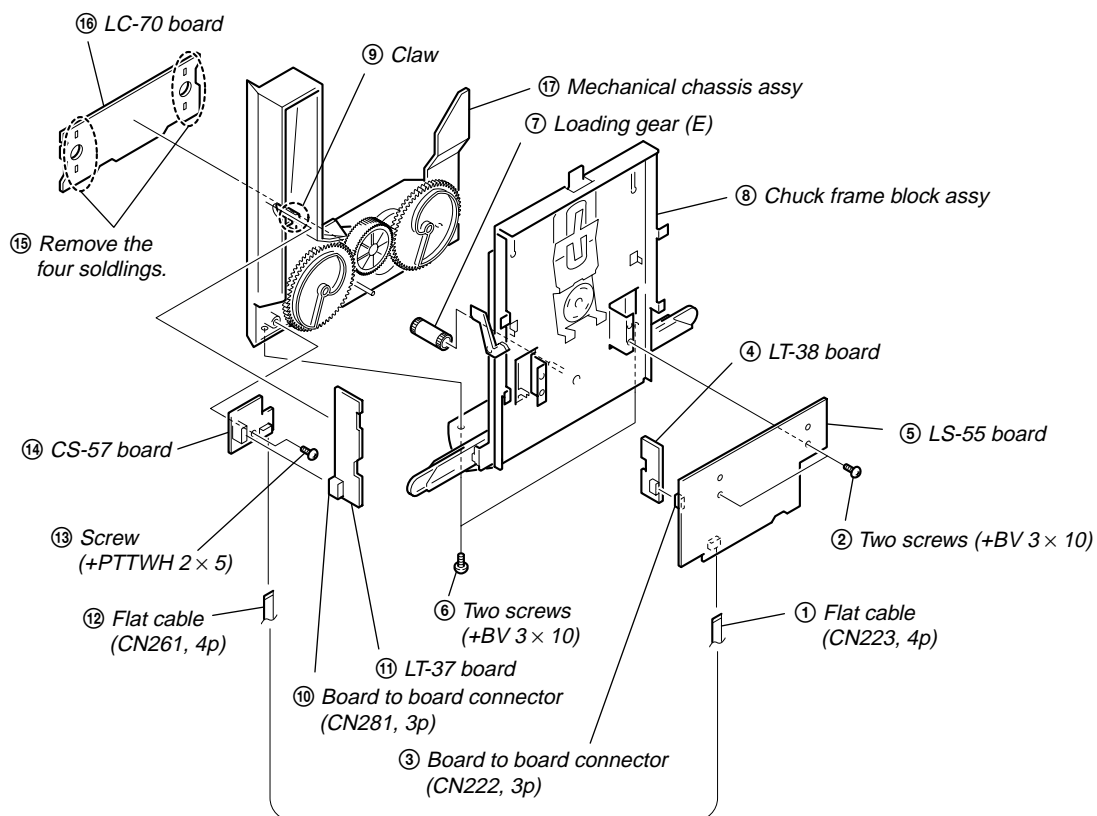
2-7. TURN TABLE ASSEMBLY



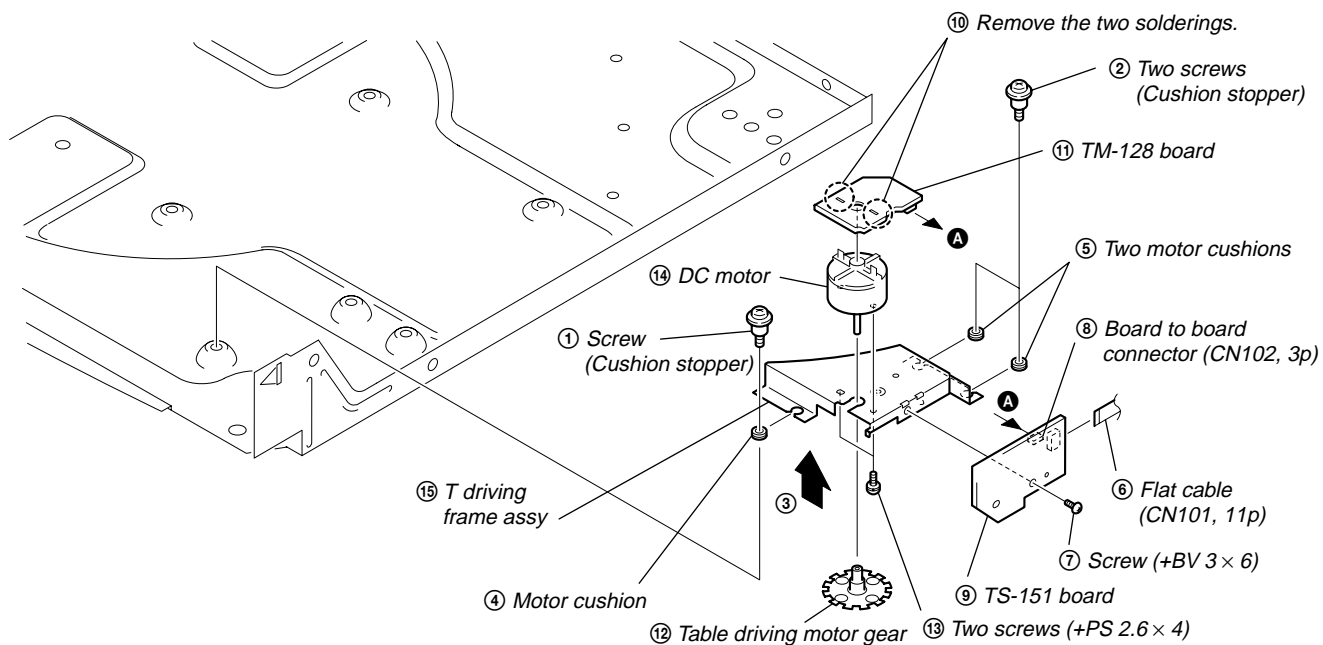
2-8. BASE UNIT SECTION



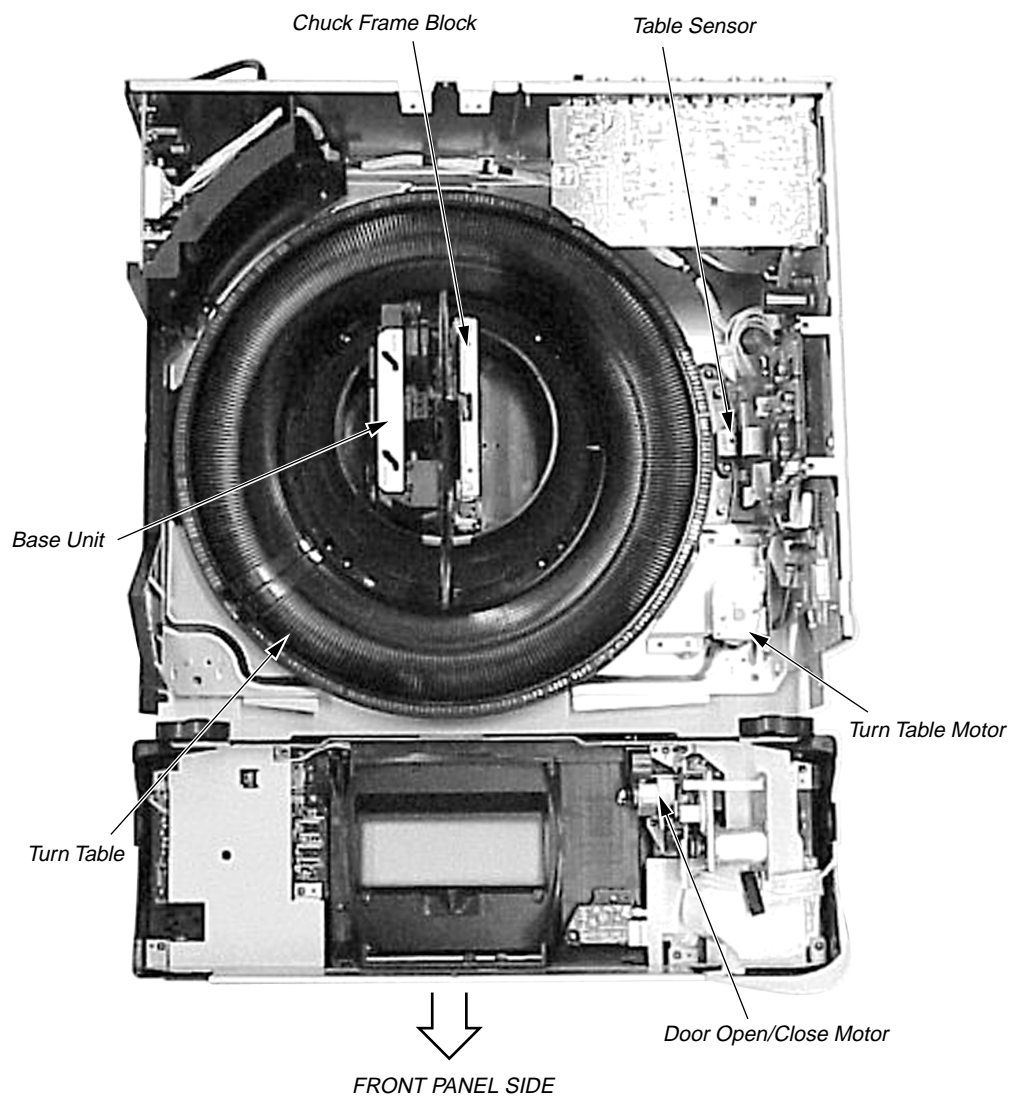
2-9. MECHANICAL CHASSIS SECTION



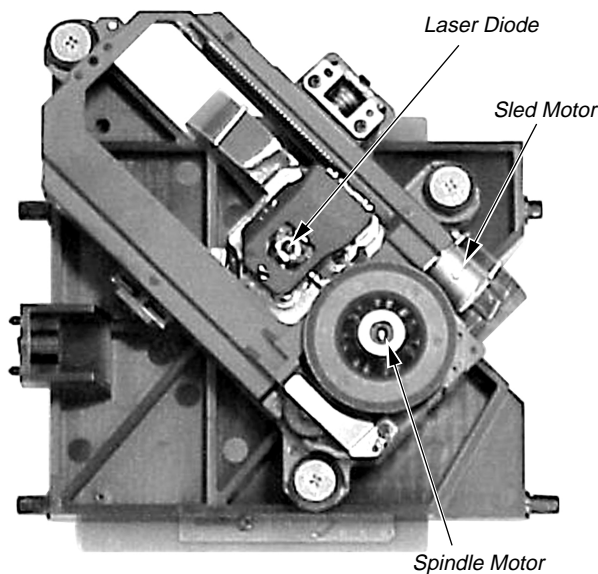
2-10.T DRIVING ASSEMBLY



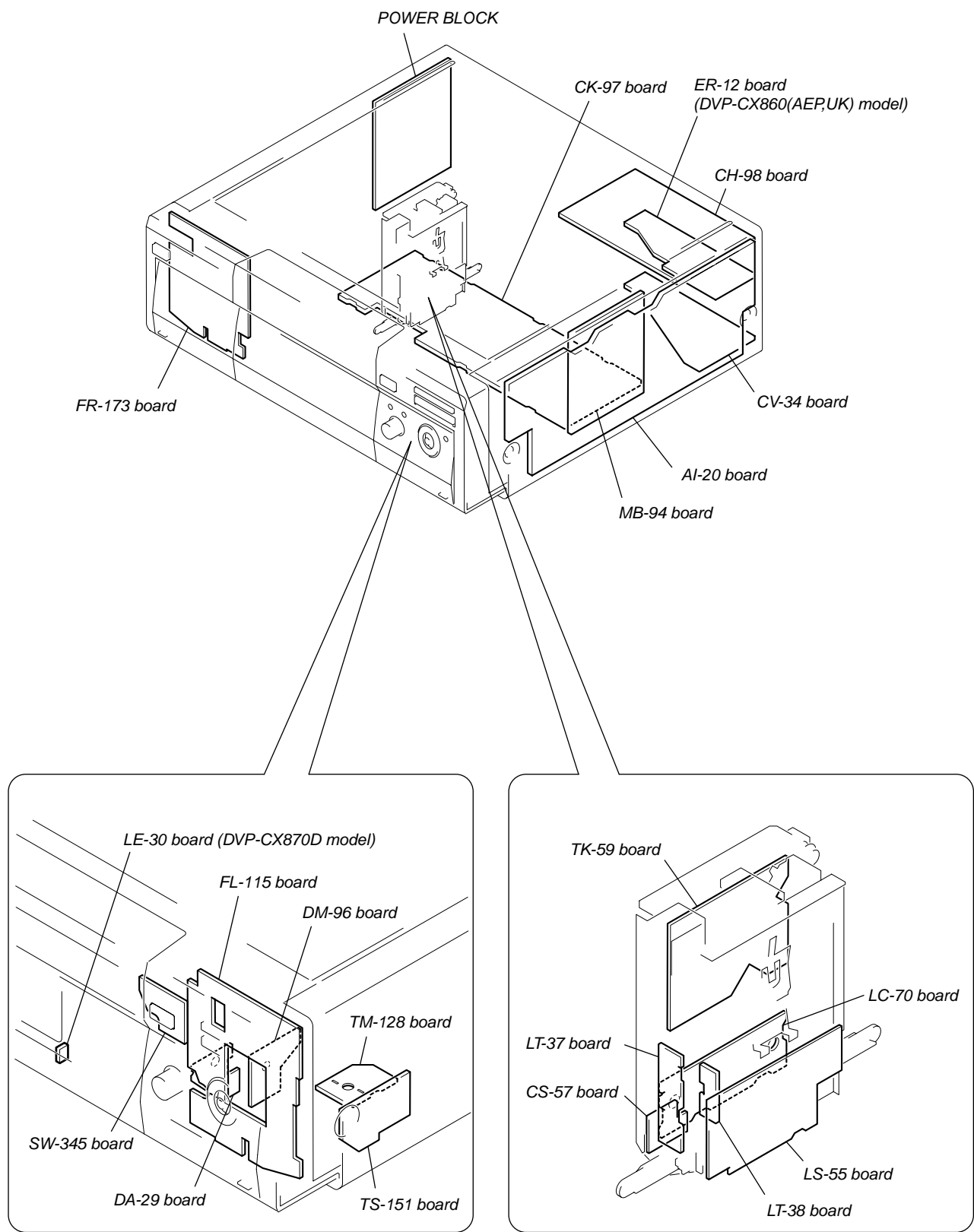
2-11.INTERNAL VIEWS



• BASE UNIT SECTION



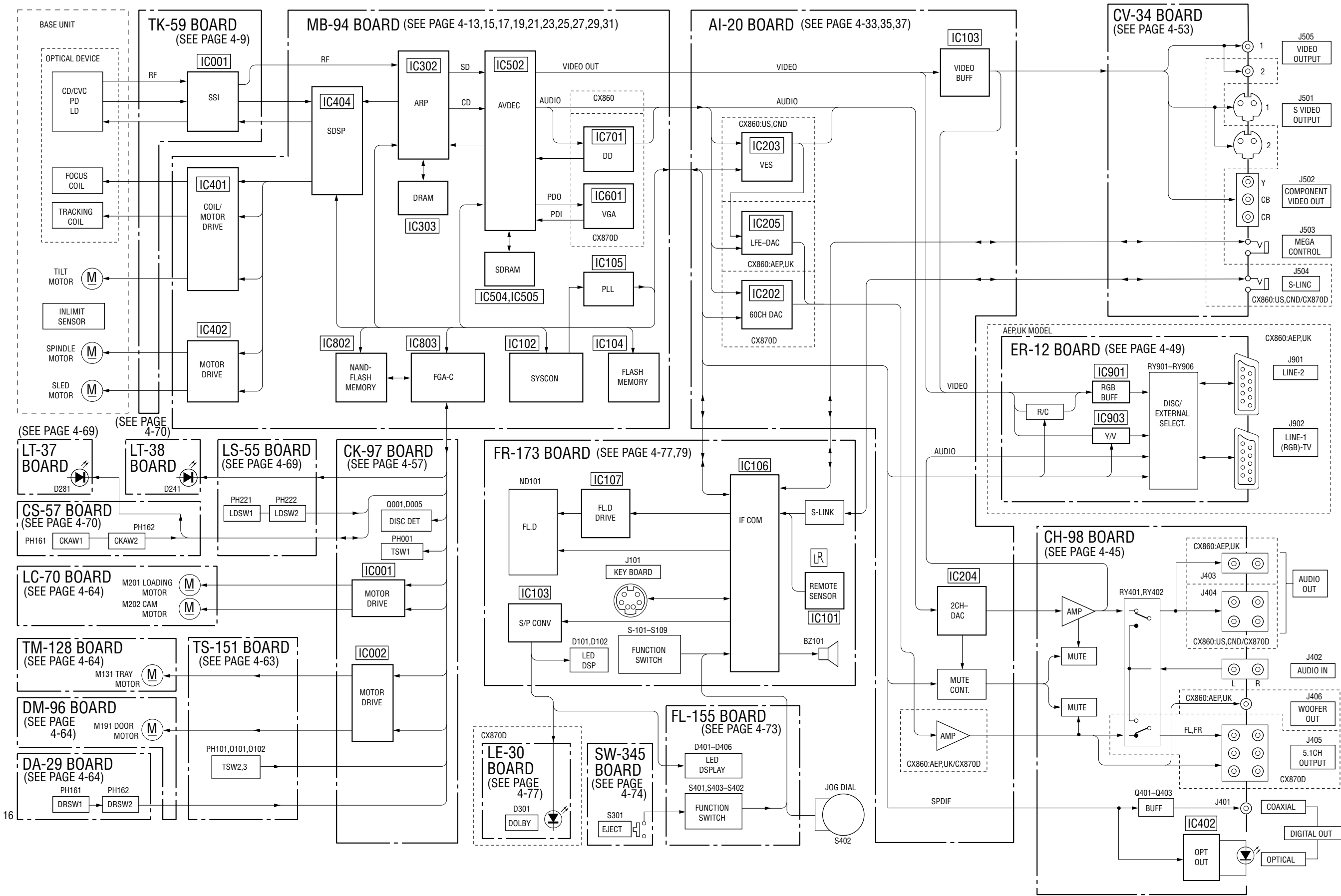
2-12.CIRCUIT BOARDS LOCATION



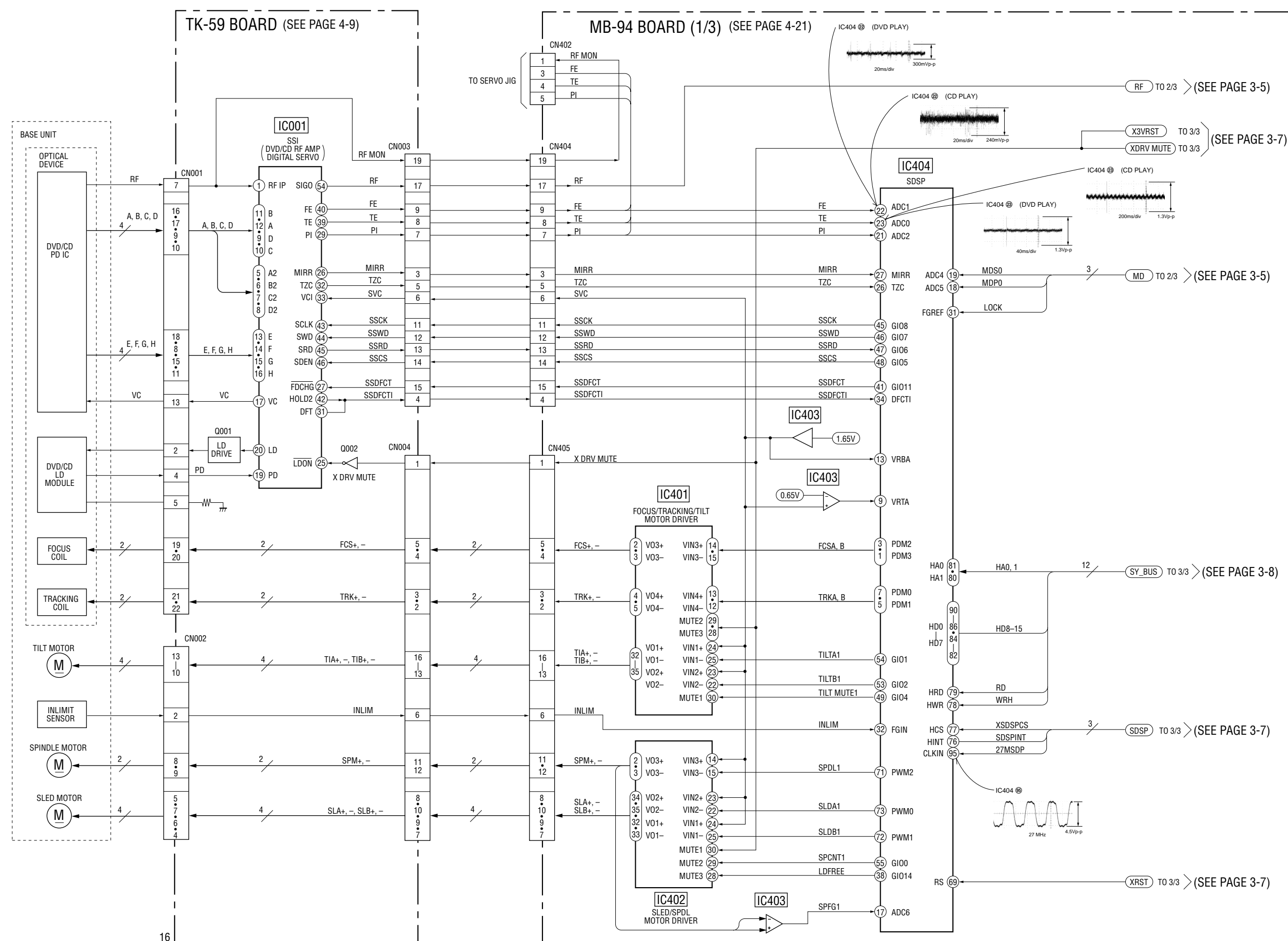
MEMO

SECTION 3 BLOCK DIAGRAMS

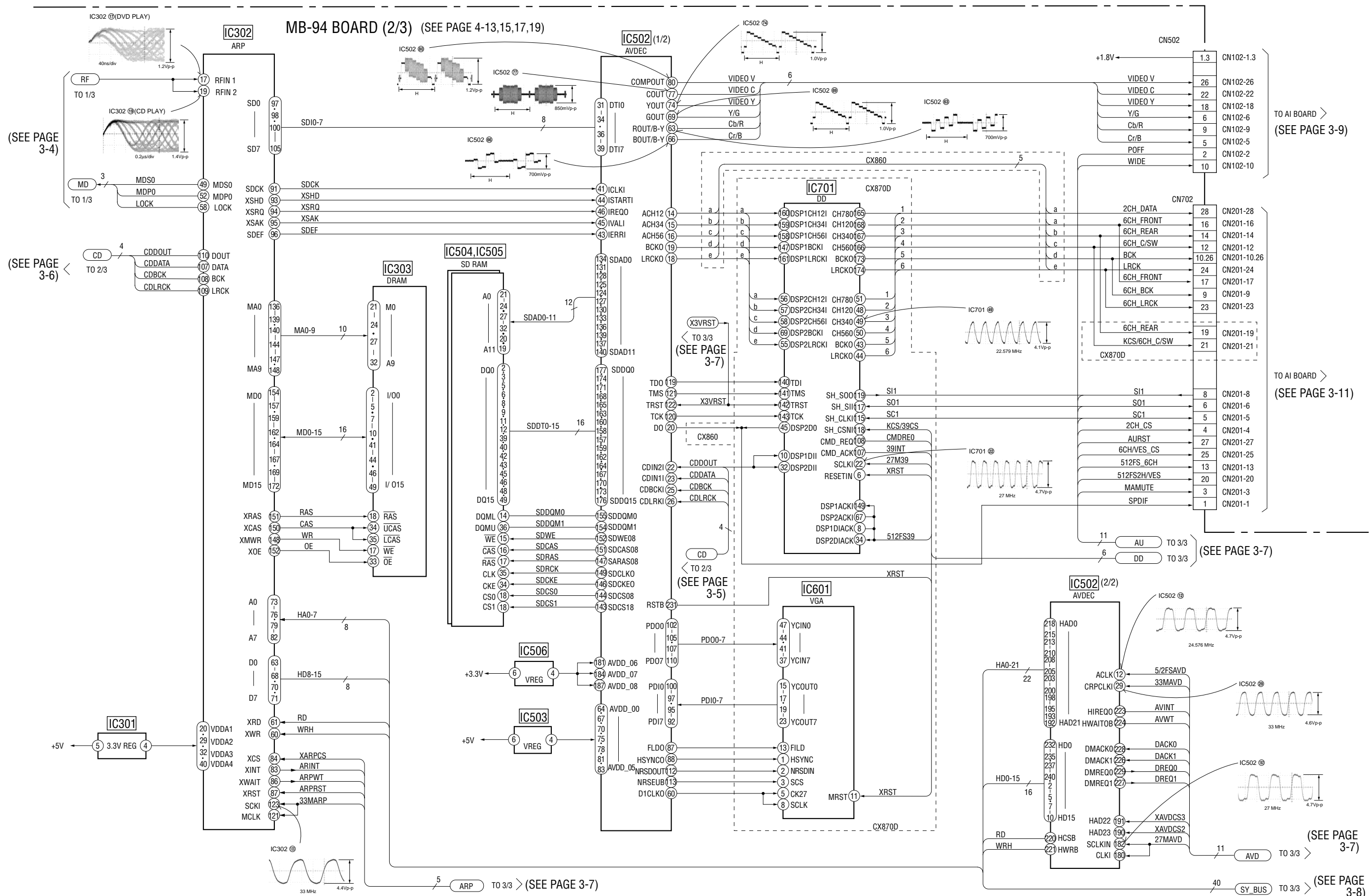
3-1. OVERALL BLOCK DIAGRAM



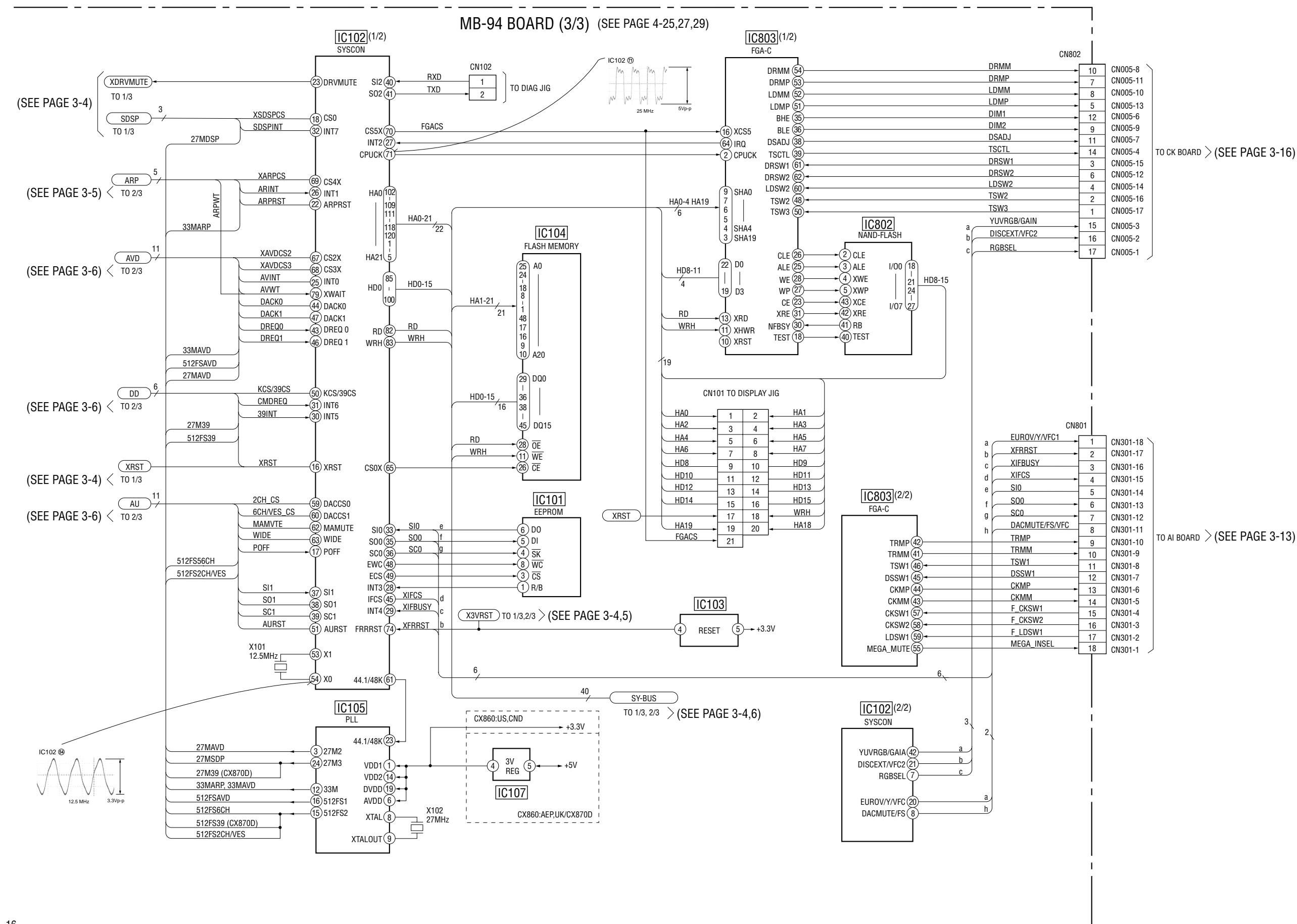
3-2. RF/SERVO BLOCK DIAGRAM



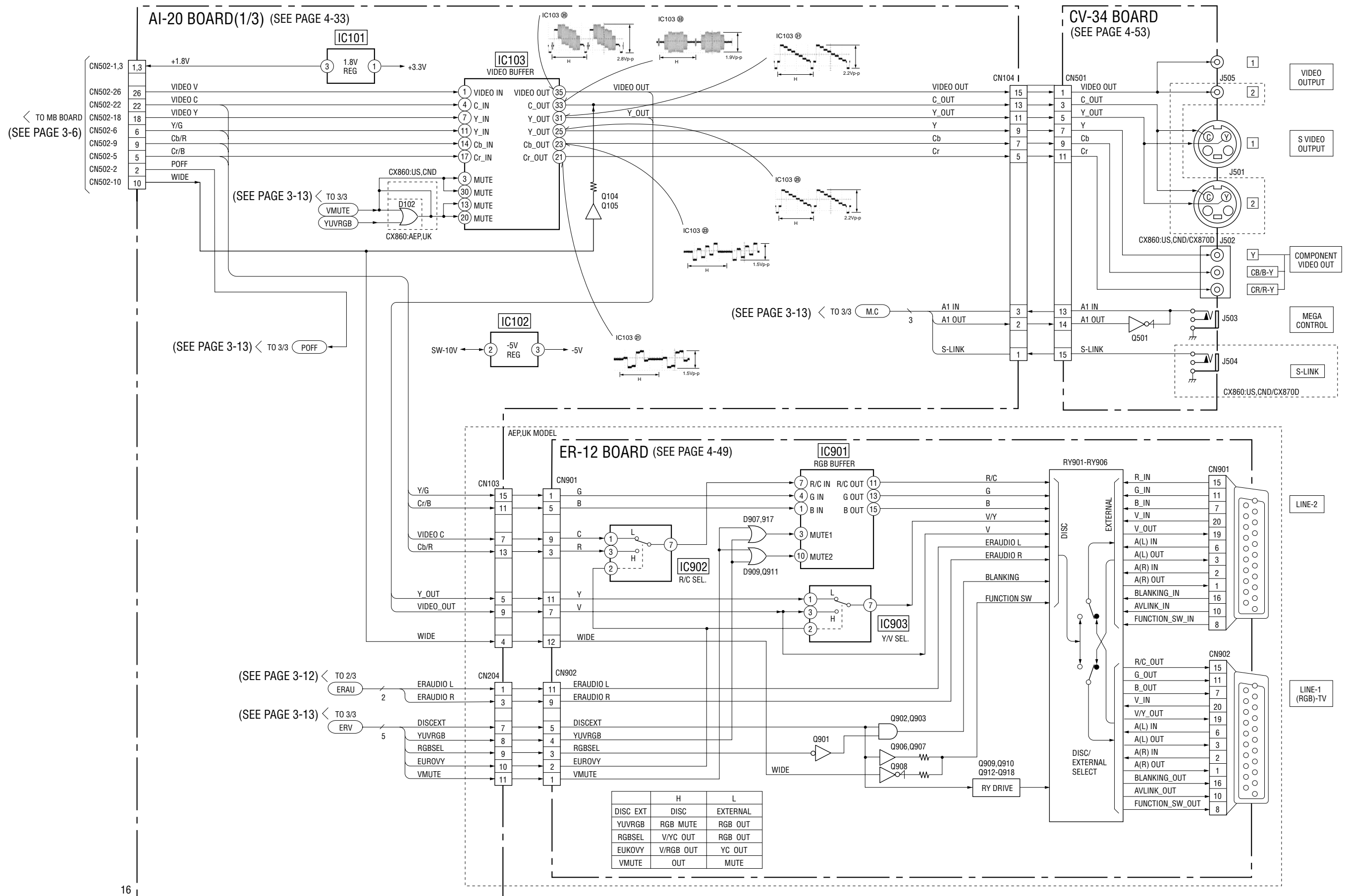
3-3. SIGNAL PROCESS BLOCK DIAGRAM



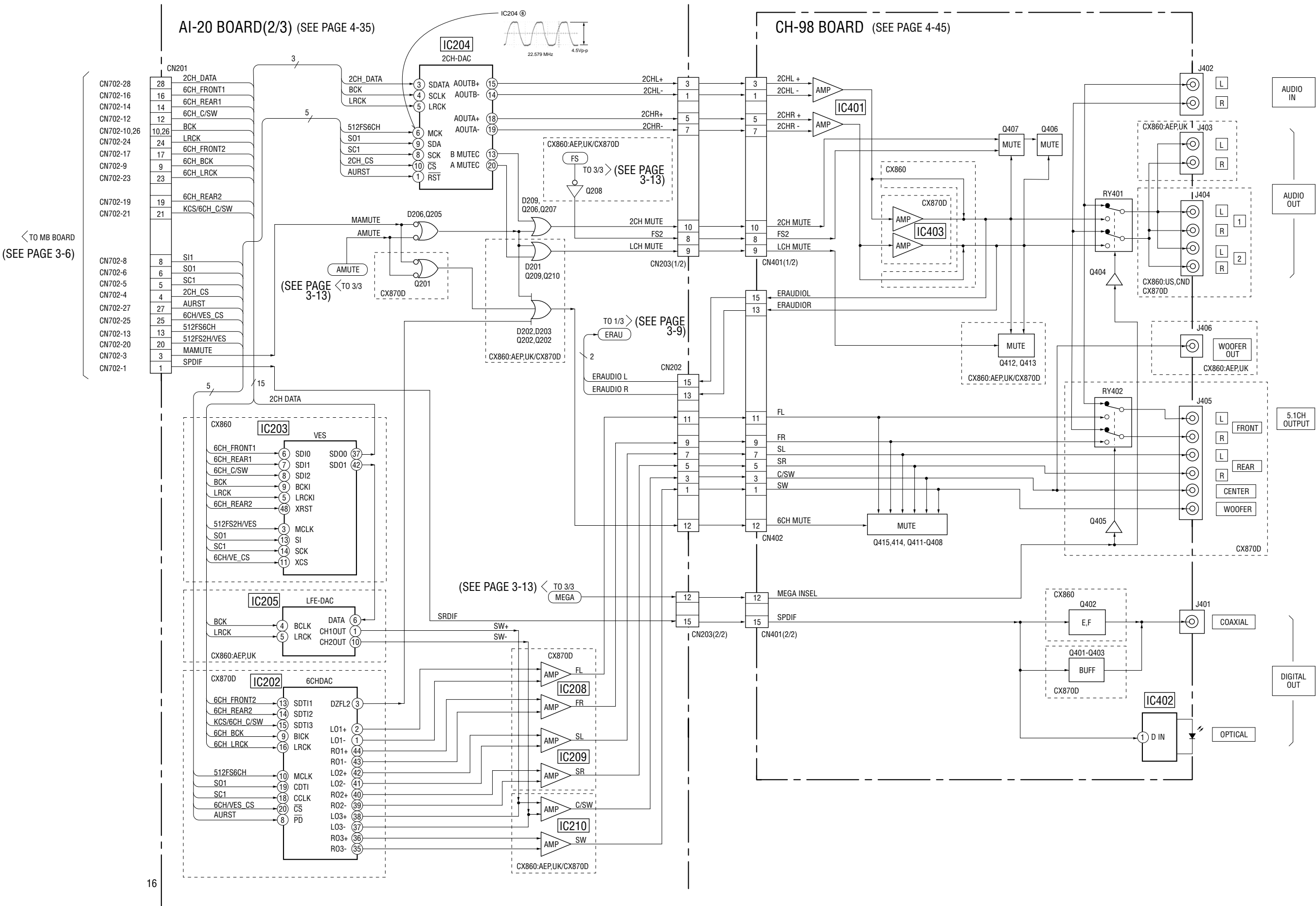
3-4. SYSTEM CONTROL BLOCK DIAGRAM



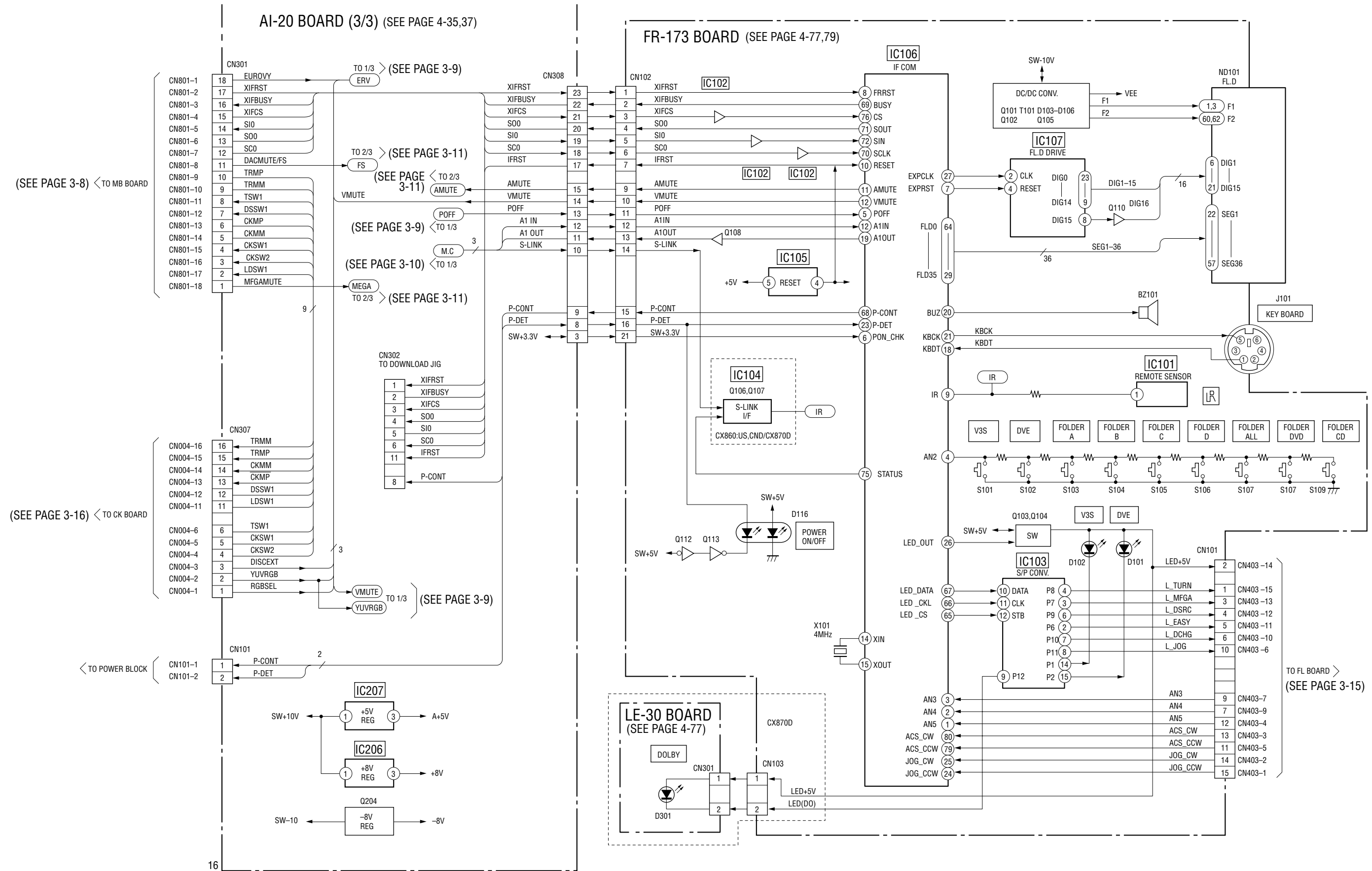
3-5. VIDEO EURO BLOCK DIAGRAM



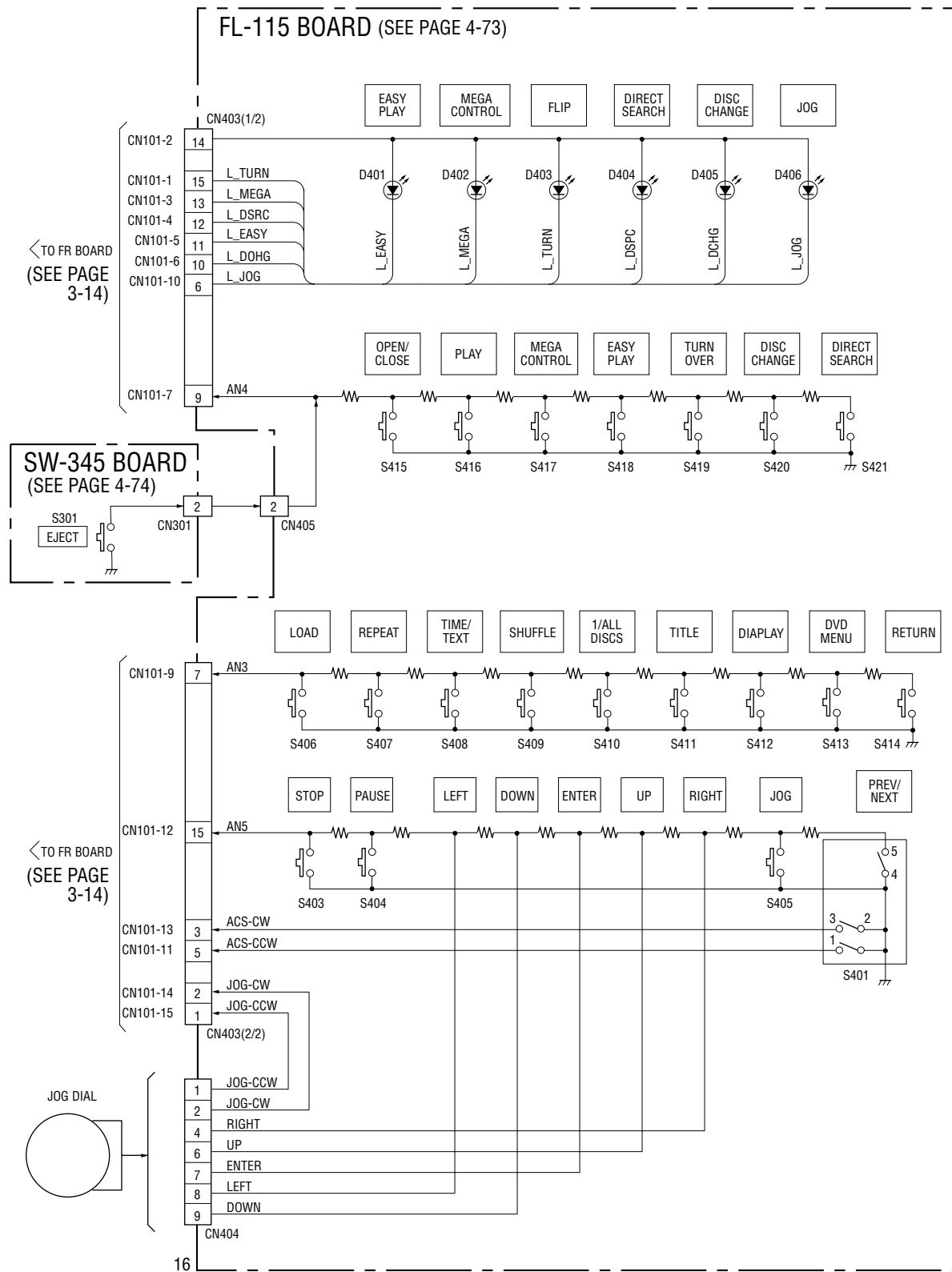
3-6. AUDIO BLOCK DIAGRAM



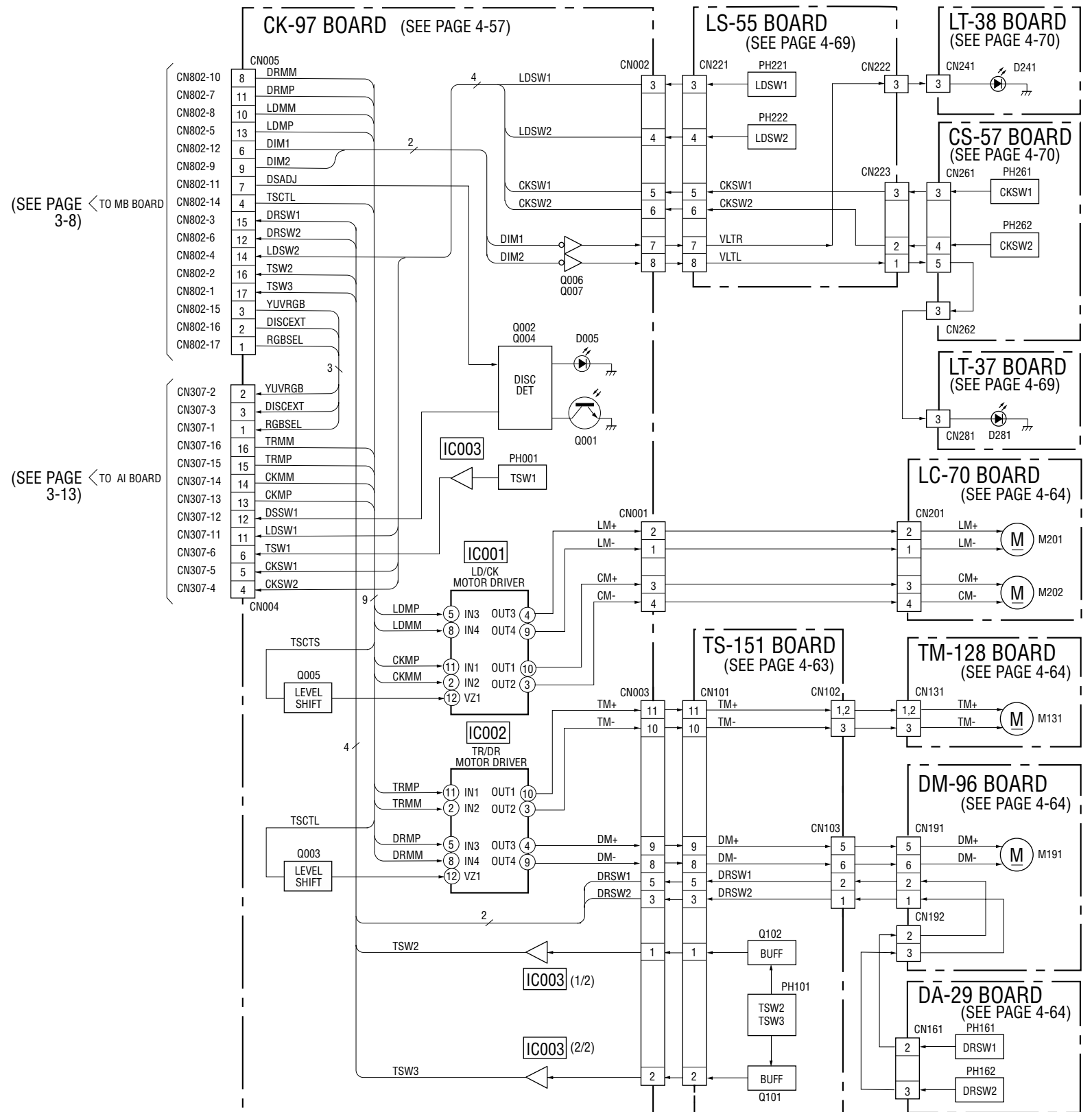
3-7. INTERFACE CONTROL BLOCK DIAGRAM (1/2)



3-8. INTERFACE CONTROL BLOCK DIAGRAM (2/2)

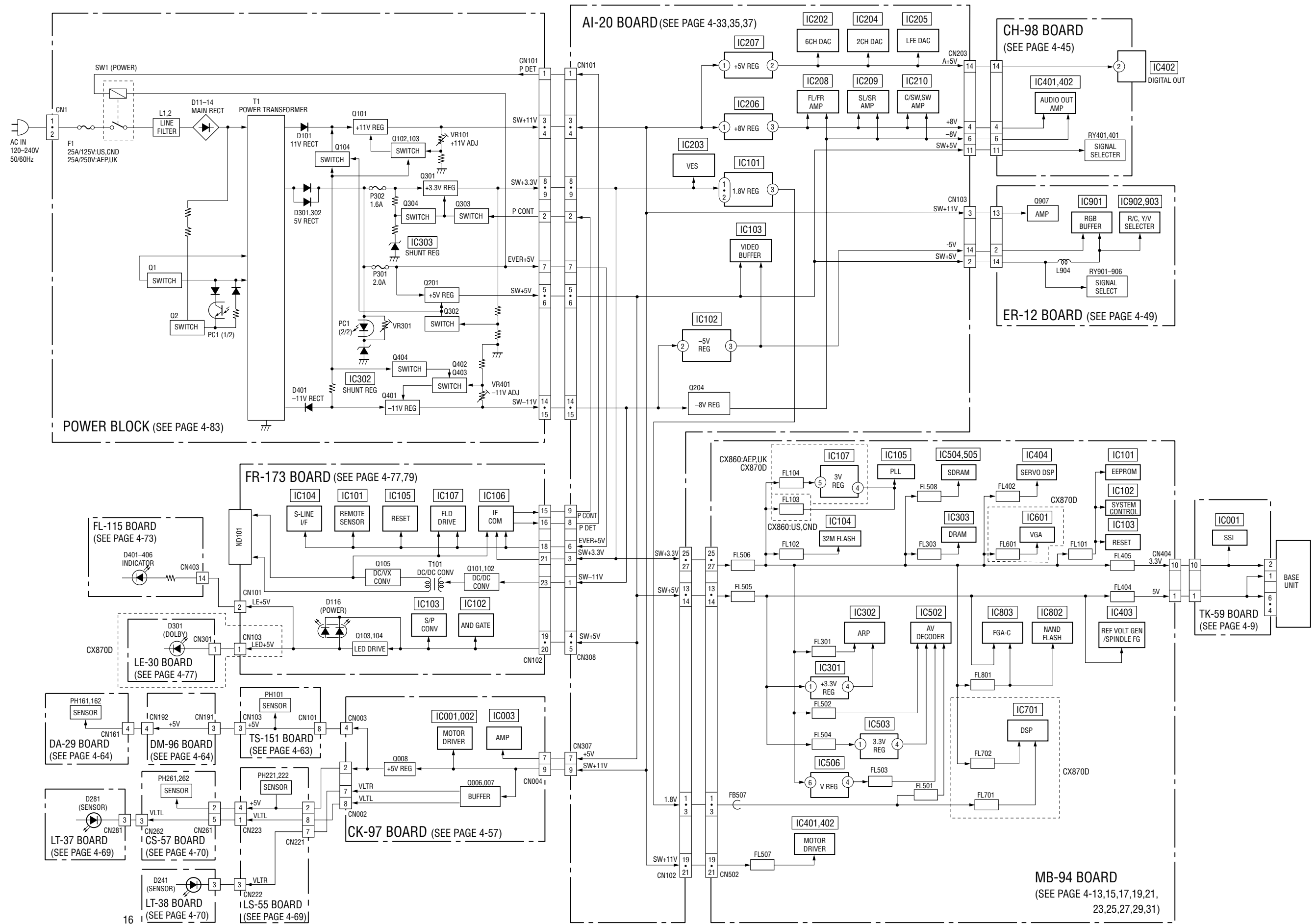


3-15



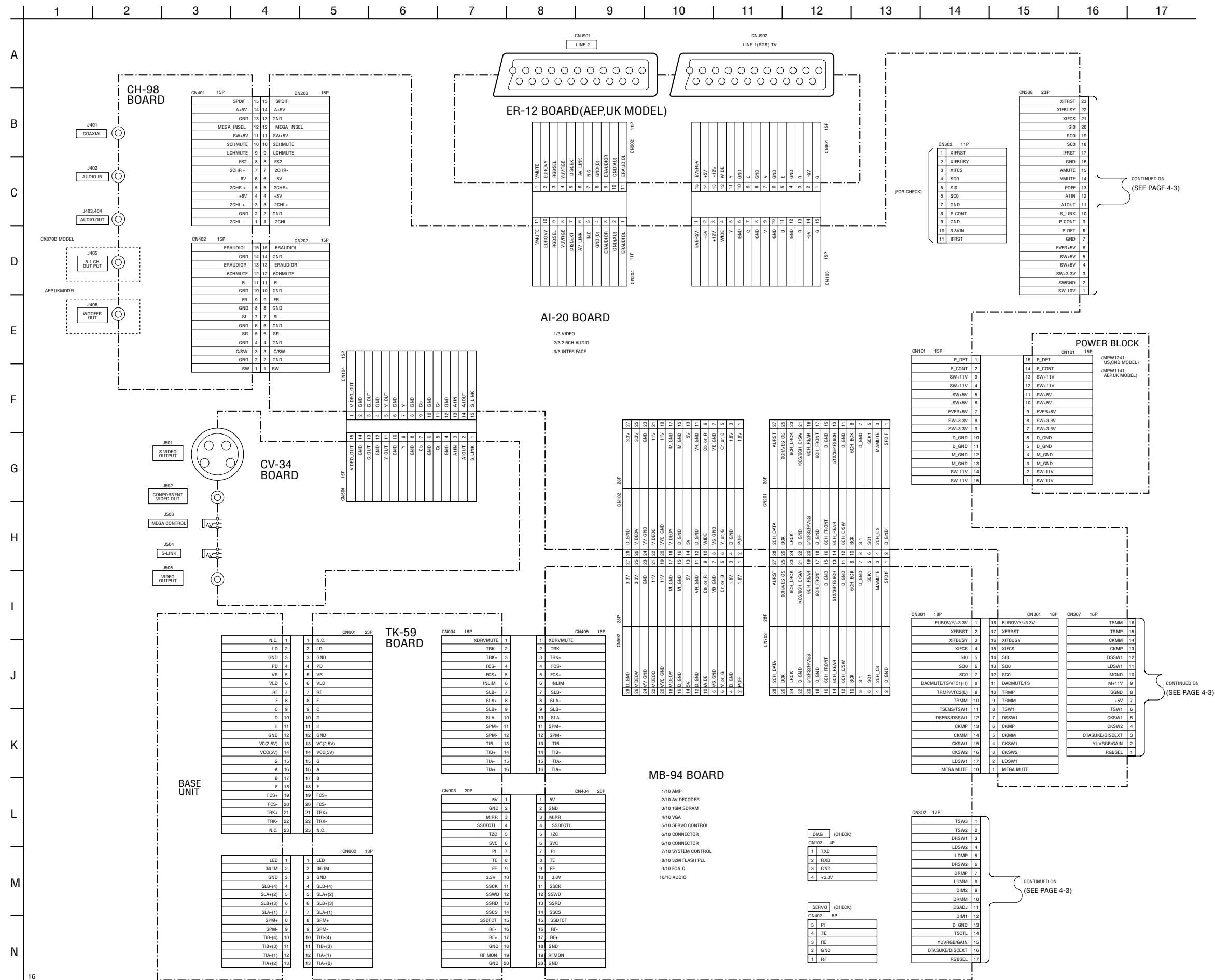
3-16

3-9. POWER BLOCK DIAGRAM

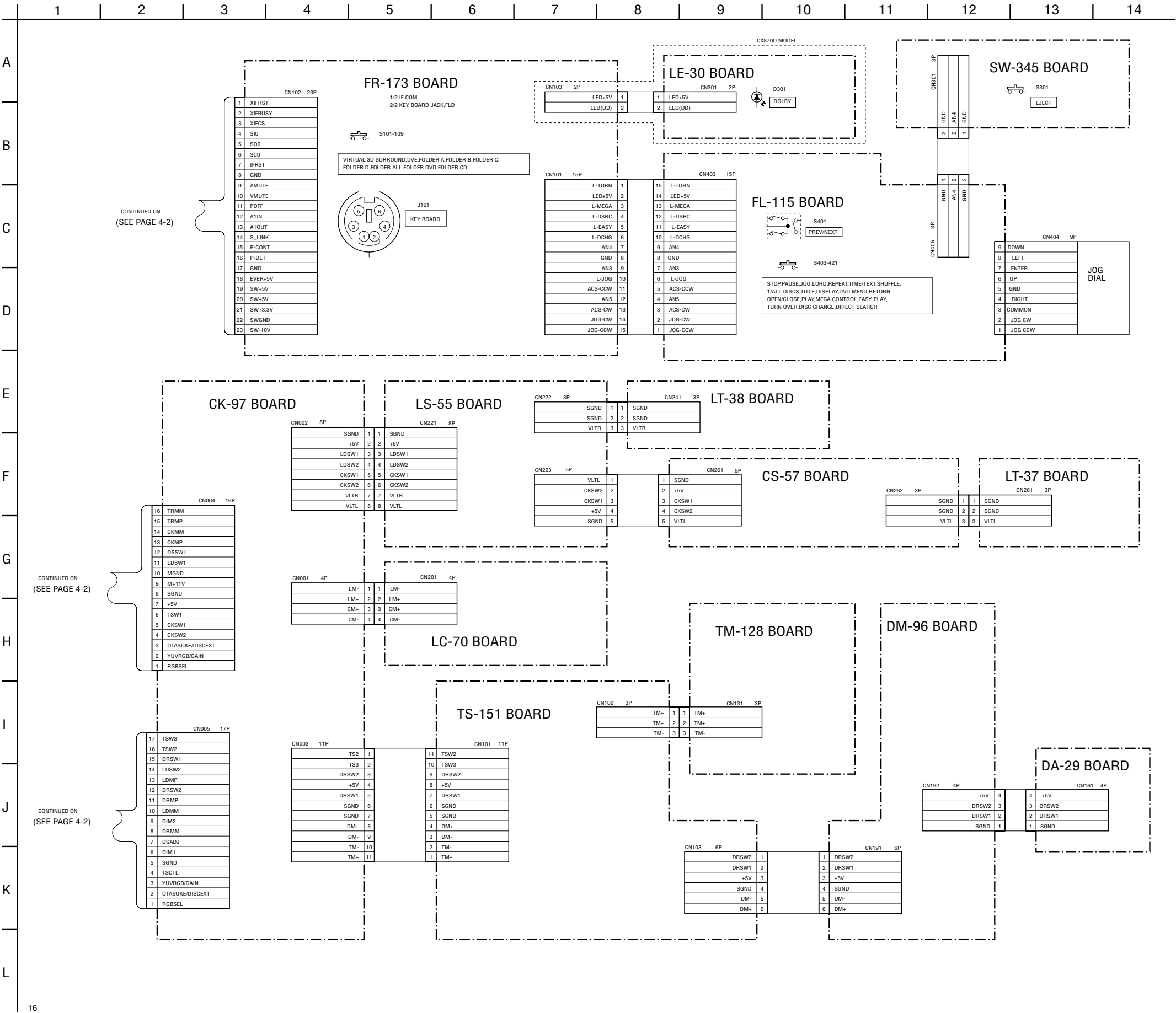


MEMO

4-1. FRAME SCHEMATIC DIAGRAM (1/2)



FRAME SCHEMATIC DIAGRAM (2/2)



4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR WIRING BOARDS AND SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)








(For printed wiring boards)

- — : indicates a lead wire mounted on the component side.
- — : indicates a lead wire mounted on the printed side.
- : Through hole.
- ▨ : Pattern from the side which enables seeing.
(The other layers' patterns are not indicated.)



Caution:

Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.


(For schematic diagrams)

- All capacitors are in μF unless otherwise noted. pF : $\mu\mu\text{F}$. 50V or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4 W (Chip resistors : 1 /10 W) un-less otherwise specified.
 $\text{k}\Omega=1000\Omega$, $\text{M}\Omega=1000\text{k}\Omega$.
- Caution when replacing chip parts.
New parts must be attached after removal of chip.
Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
-  : non flammable resistor
-  : fusible resistor
-  : panel designation
-  : internal component.
-  : adjustment for repair.
-  : B+ Line
-  : B- Line
- Circled numbers refer to waveforms.
- Voltages are dc between measurement point.
- Readings are taken with a color-bar signals on DVD refer-ence disc and when playing CD reference disc.
- Readings are taken with a digital multimeter (DC 10MW).
- Voltage variations may be noted due to normal production toler-ances.

Note :

The components identified by mark  or dotted line with mark  are critical for safety.
Replace only with part number specified.

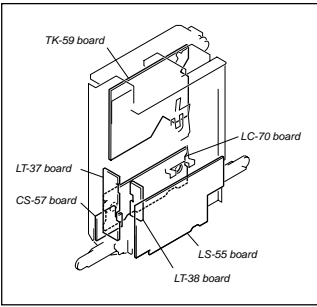
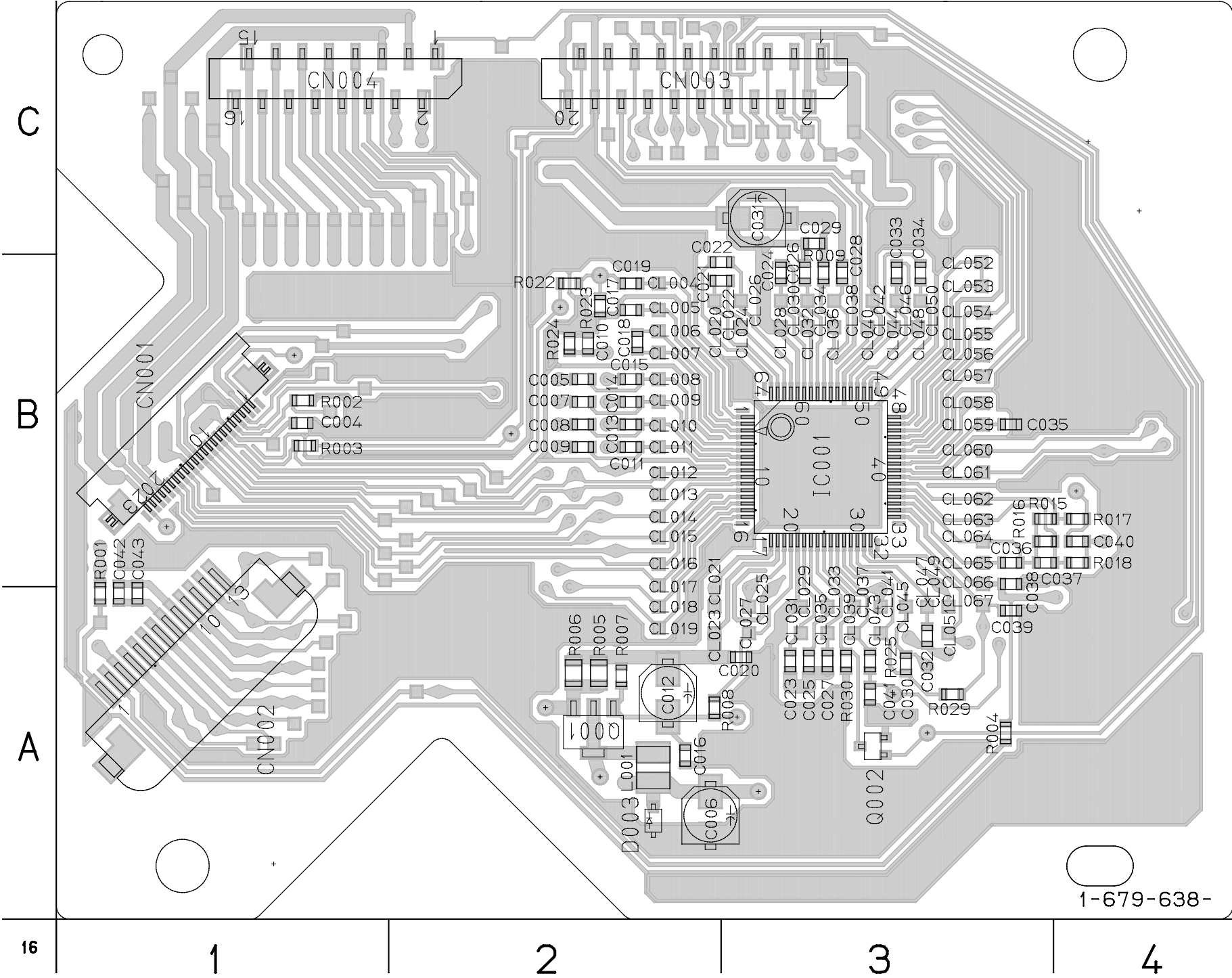
Note :

Les composants identifiés par une marque  sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, pleas include the board name.

TK-59 (RF/SERVO) PRINTED WIRING BOARD
— Ref. No. TK-59 Board; 1,000 Series —

TK-59 BOARD (SIDE A)

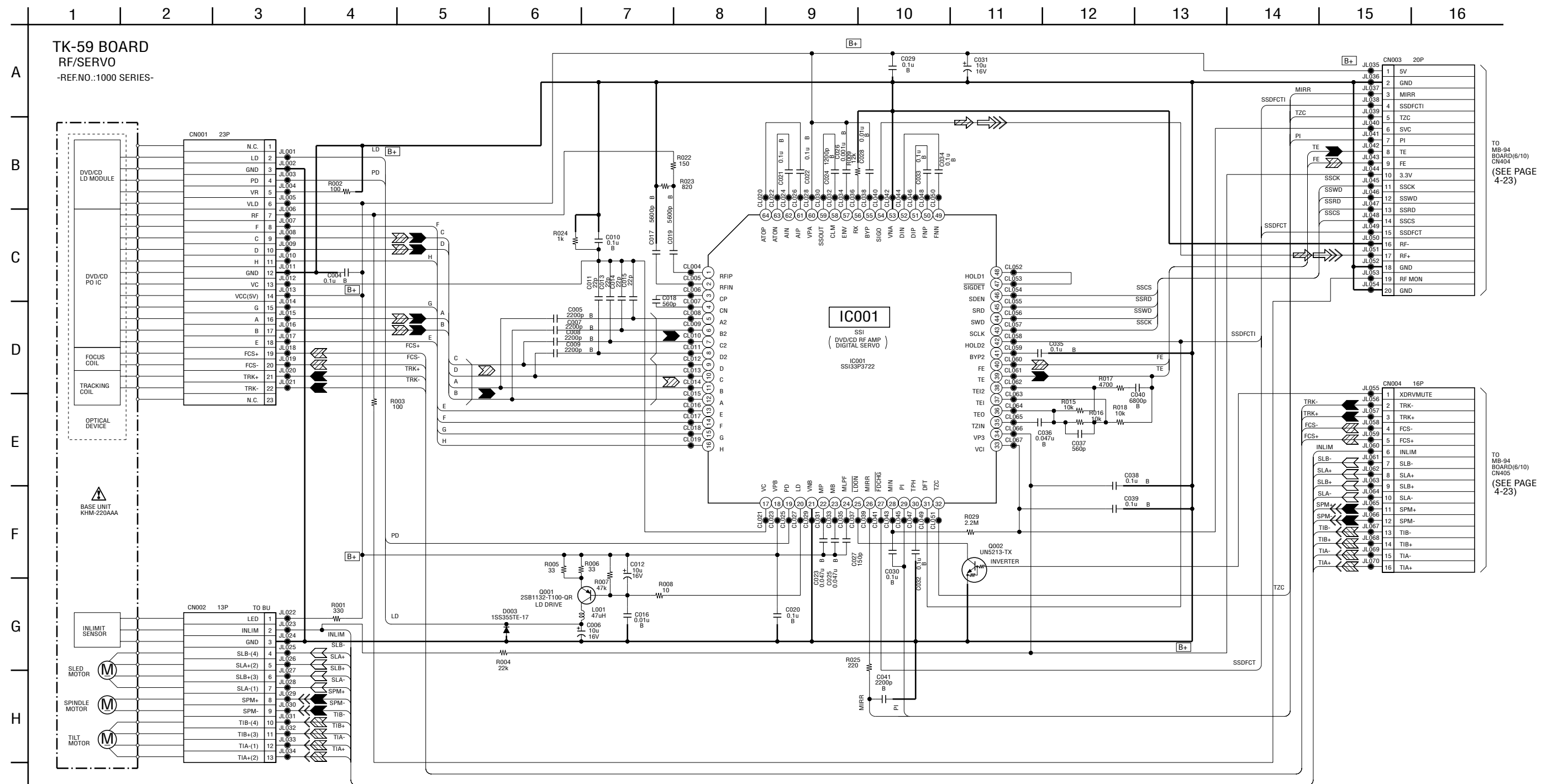


TK-59 BOARD (SIDE A)








- D003 A-2
- IC001 B-3
- Q001 A-2
- Q002 A-3



For printed wiring board


There are a few cases that the part printed on this diagram isn't mounted in this model.



SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB				
SPINDLE SERVO (SPEED AND PHASE)				
TRACKING SERVO DVD/CD CDV				
SLED SERVO DVD/CD				
FOCUS SERVO				
SKEW SERVO DVD/CD				

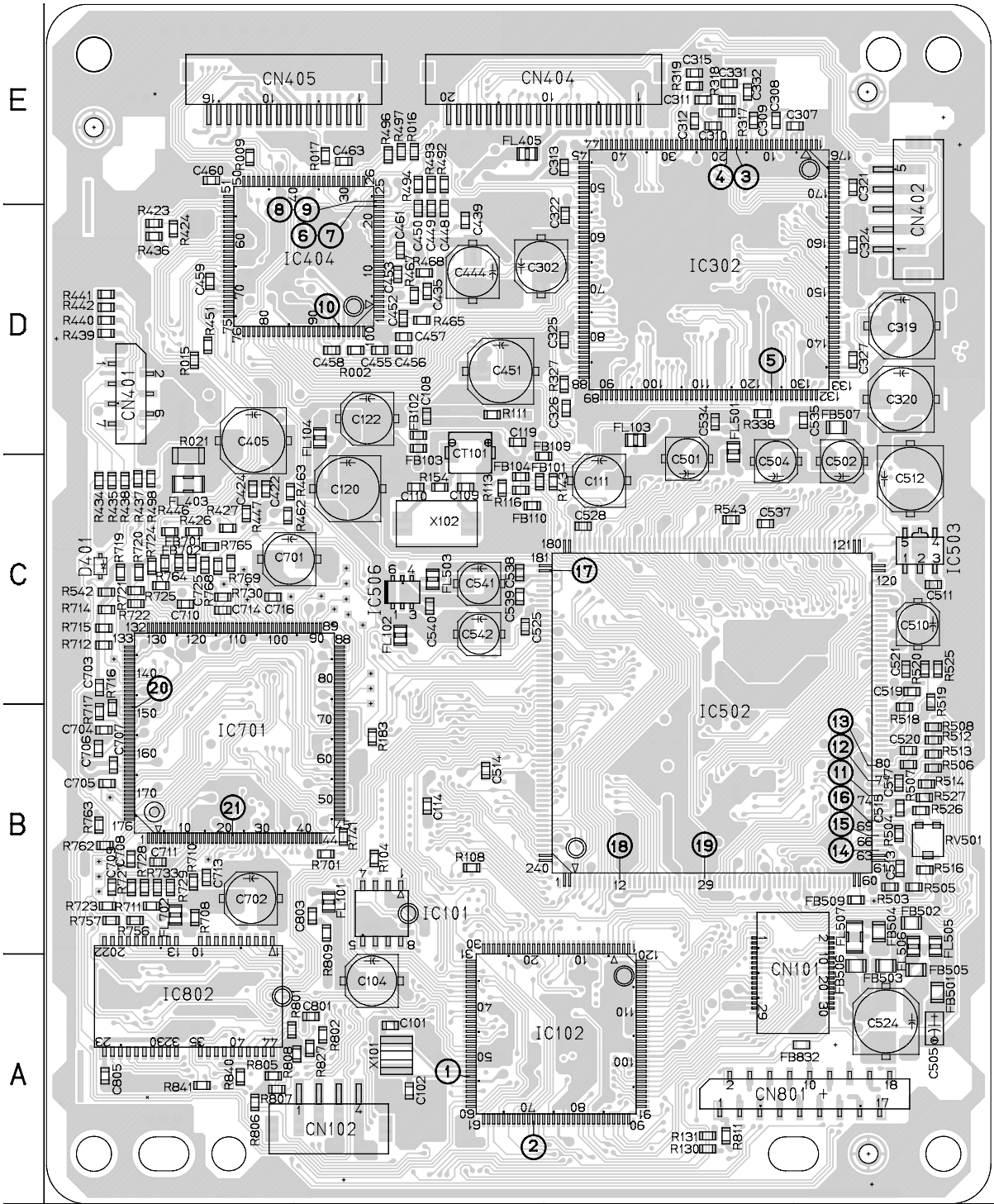
Note :
The components identified by mark  or dotted line with mark  are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque  sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

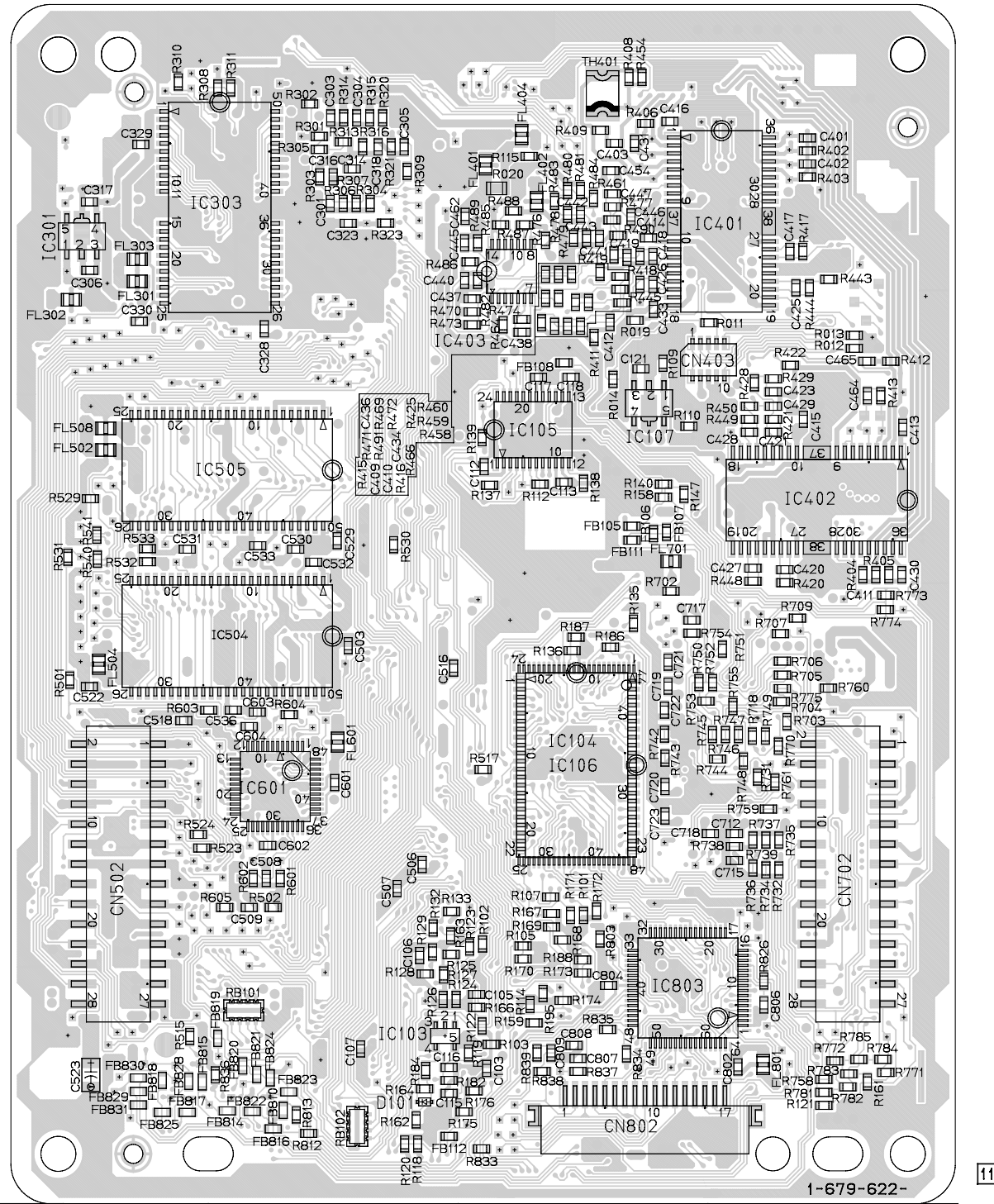
MB-94 (ARP, AV DECODER, 16M SDRAM, VGA, SERVO CONTROL, CONNECTOR, SYSTEM CONTROL, 32M FLASH, PLL, FGA-C, AUDIO) PRINTED WIRING BOARD

— Ref. No. MB-94 Board; 10,000 Series —

MB-94 BOARD (SIDE A)



MB-94 BOARD (SIDE B)

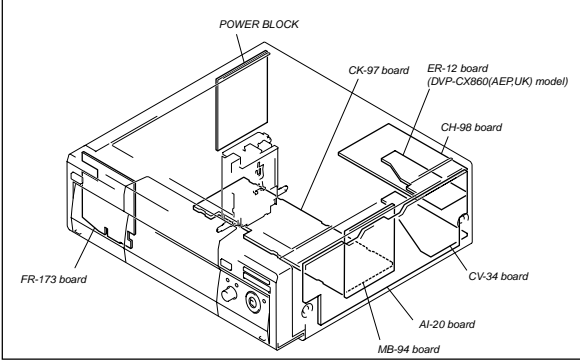


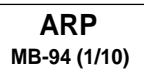
MB-94 BOARD (SIDE A) MB-94 BOARD (SIDE B)

D401	C-1	D101	A-6	IC403	D-7
IC101	B-2	IC103	A-6	IC504	C-6
IC102	A-3	IC104	B-7	IC505	C-6
IC302	D-3	IC105	D-7	IC601	B-6
IC404	D-2	IC106	B-7	IC803	A-7
IC502	B-3	IC107	D-7		
IC503	C-4	IC301	D-5		
IC506	C-2	IC303	E-6		
IC701	B-1	IC401	D-8		
IC802	A-1	IC402	C-8		

For printed wiring board

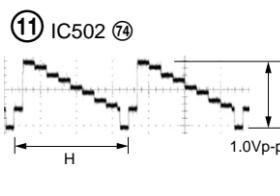
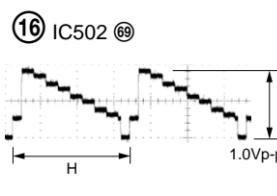
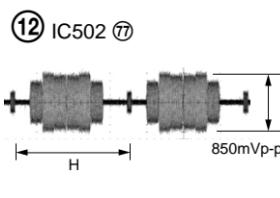
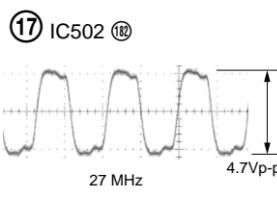
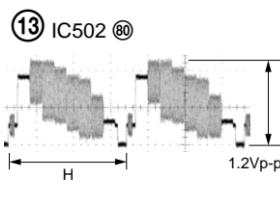
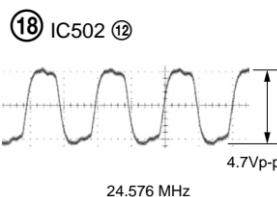
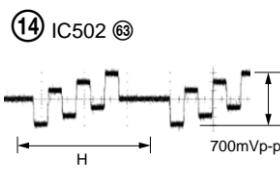
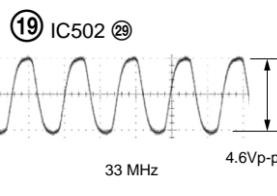
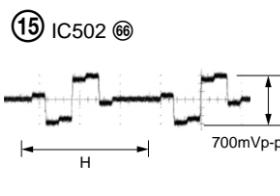
There are a few cases that the part printed on this diagram isn't mounted in this model.

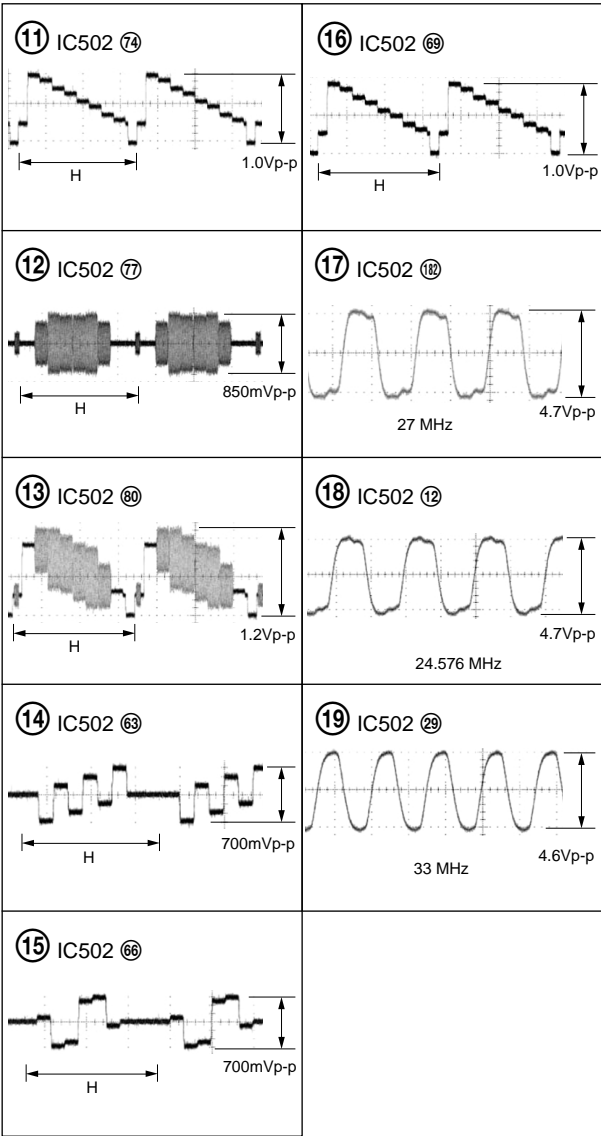






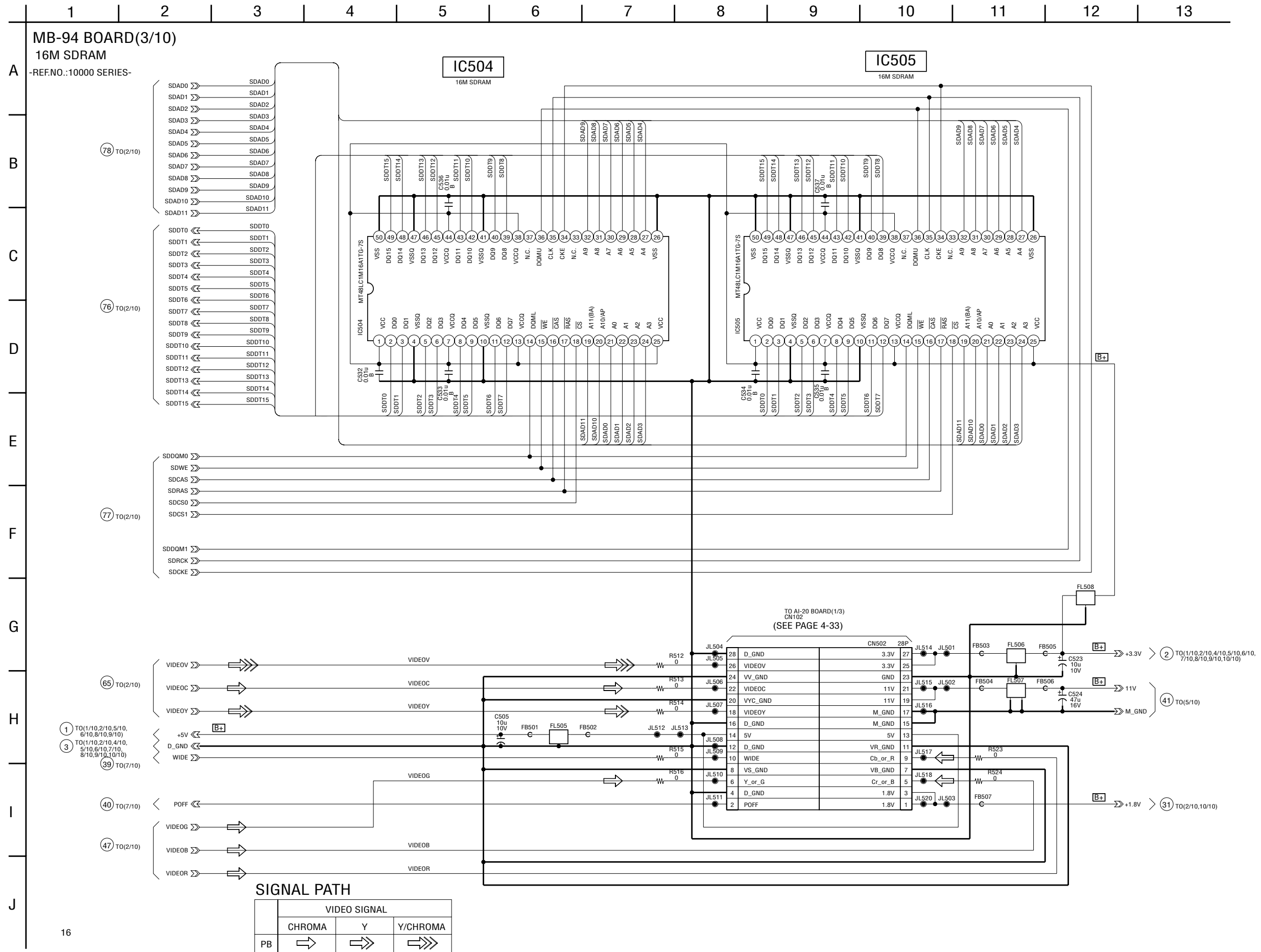
4-16

<p>(11) IC502 (74)</p>  <p>H</p> <p>1.0Vp-p</p>	<p>(16) IC502 (69)</p>  <p>H</p> <p>1.0Vp-p</p>
<p>(12) IC502 (77)</p>  <p>H</p> <p>850mVp-p</p>	<p>(17) IC502 (18)</p>  <p>27 MHz</p> <p>4.7Vp-p</p>
<p>(13) IC502 (80)</p>  <p>H</p> <p>1.2Vp-p</p>	<p>(18) IC502 (12)</p>  <p>24.576 MHz</p> <p>4.7Vp-p</p>
<p>(14) IC502 (63)</p>  <p>H</p> <p>700mVp-p</p>	<p>(19) IC502 (29)</p>  <p>33 MHz</p> <p>4.6Vp-p</p>
<p>(15) IC502 (66)</p>  <p>H</p> <p>700mVp-p</p>	

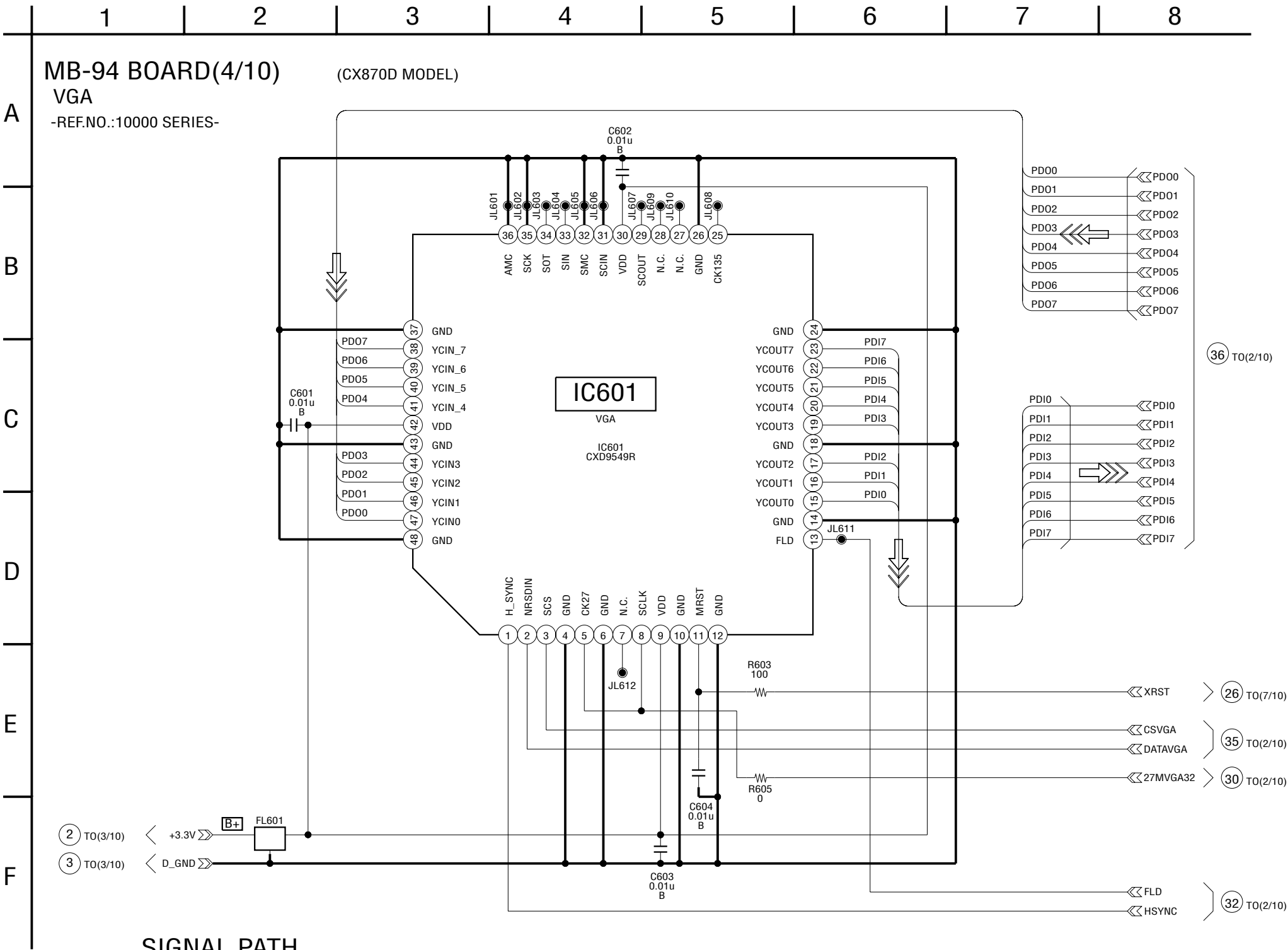


For Schematic Diagram

- Refer to page 4-11 for printed wiring board.

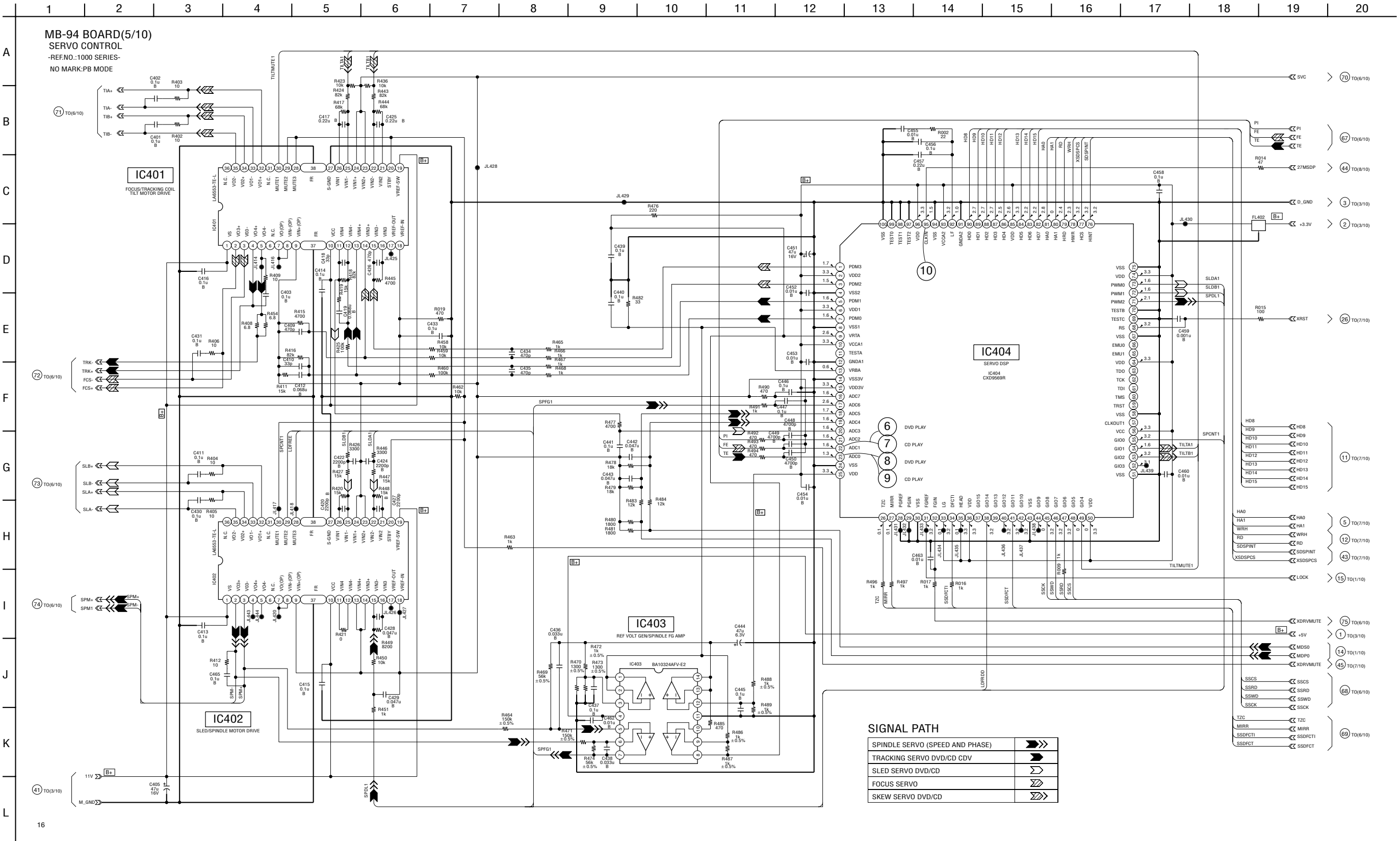


For Schematic Diagram
• Refer to page 4-11 for printed wiring board.

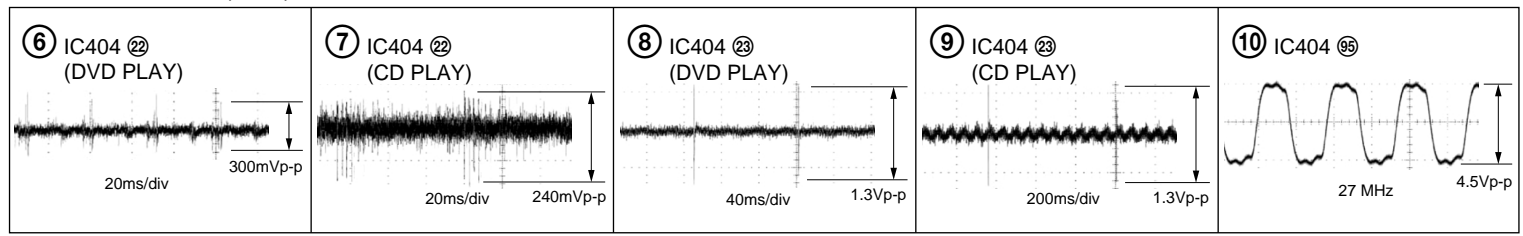


For Schematic Diagram

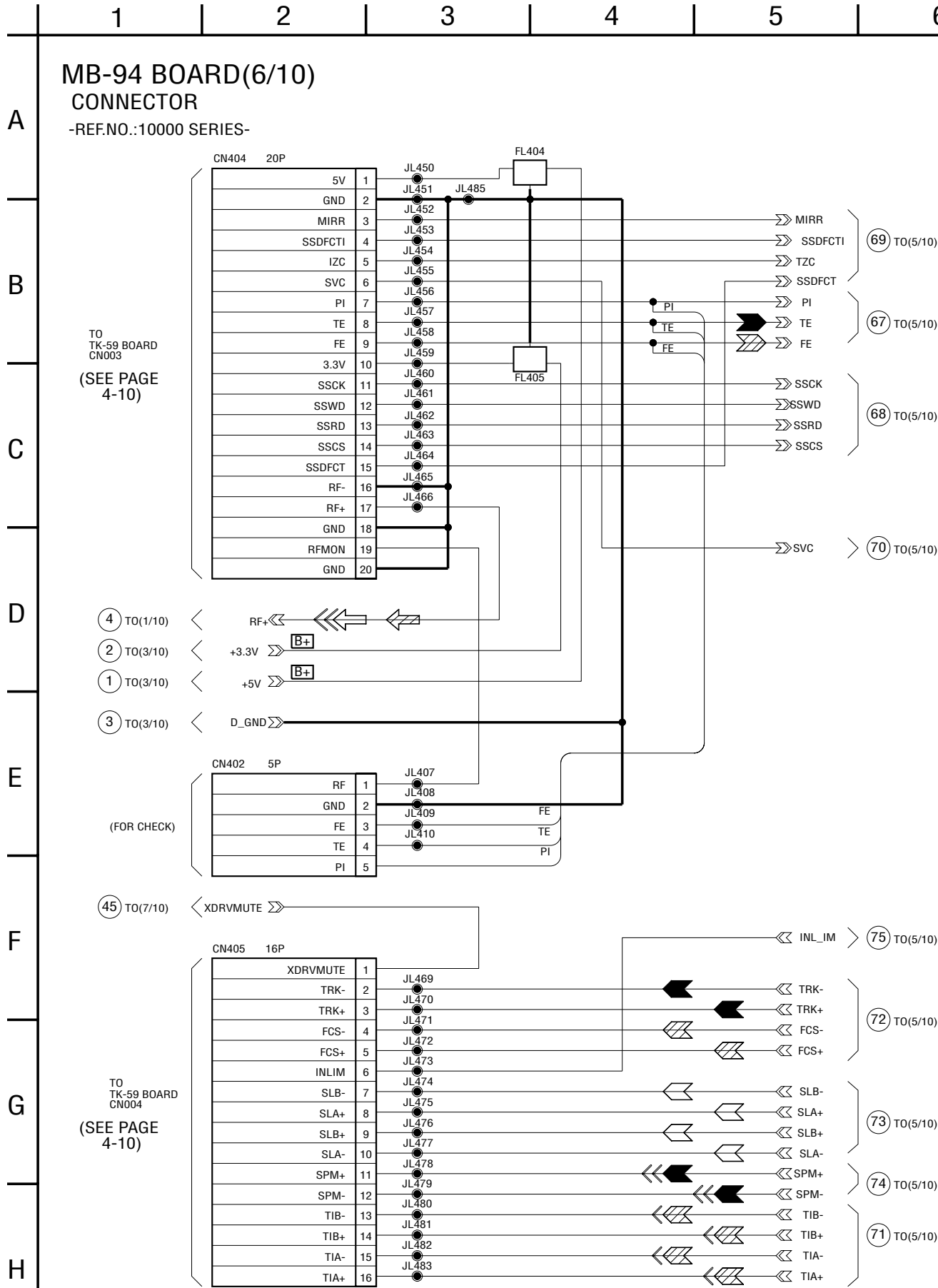
• Refer to page 4-11 for printed wiring board.



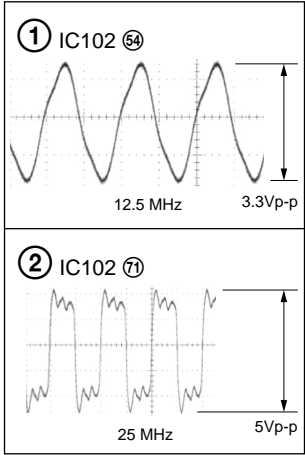
MB-94 BOARD (5/10)



For Schematic Diagram
• Refer to page 4-11 for printed wiring board.



MB-94 BOARD (7/10)



SIGNAL PATH

	VIDEO SIGNAL	AUDIO SIGNAL
	Y/CHROMA	
PB	➡➡➡	➡➡

SPINDLE SERVO (SPEED AND PHASE)	➡➡➡
TRACKING SERVO DVD/CD CDV	➡➡
SLED SERVO DVD/CD	➡➡
FOCUS SERVO	➡➡
SKEW SERVO DVD/CD	➡➡

- Refer to page 4-11 for printed wiring board.

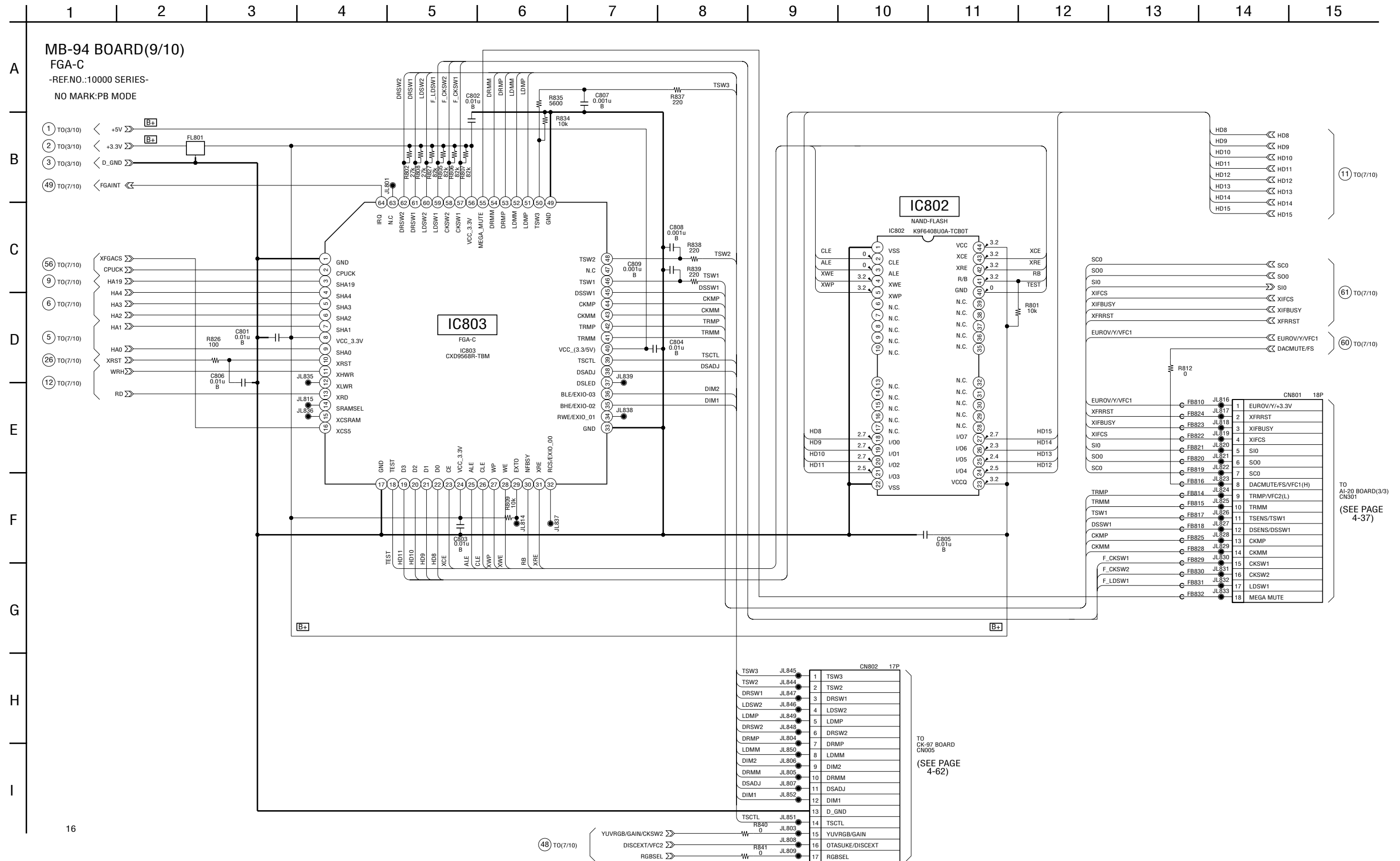


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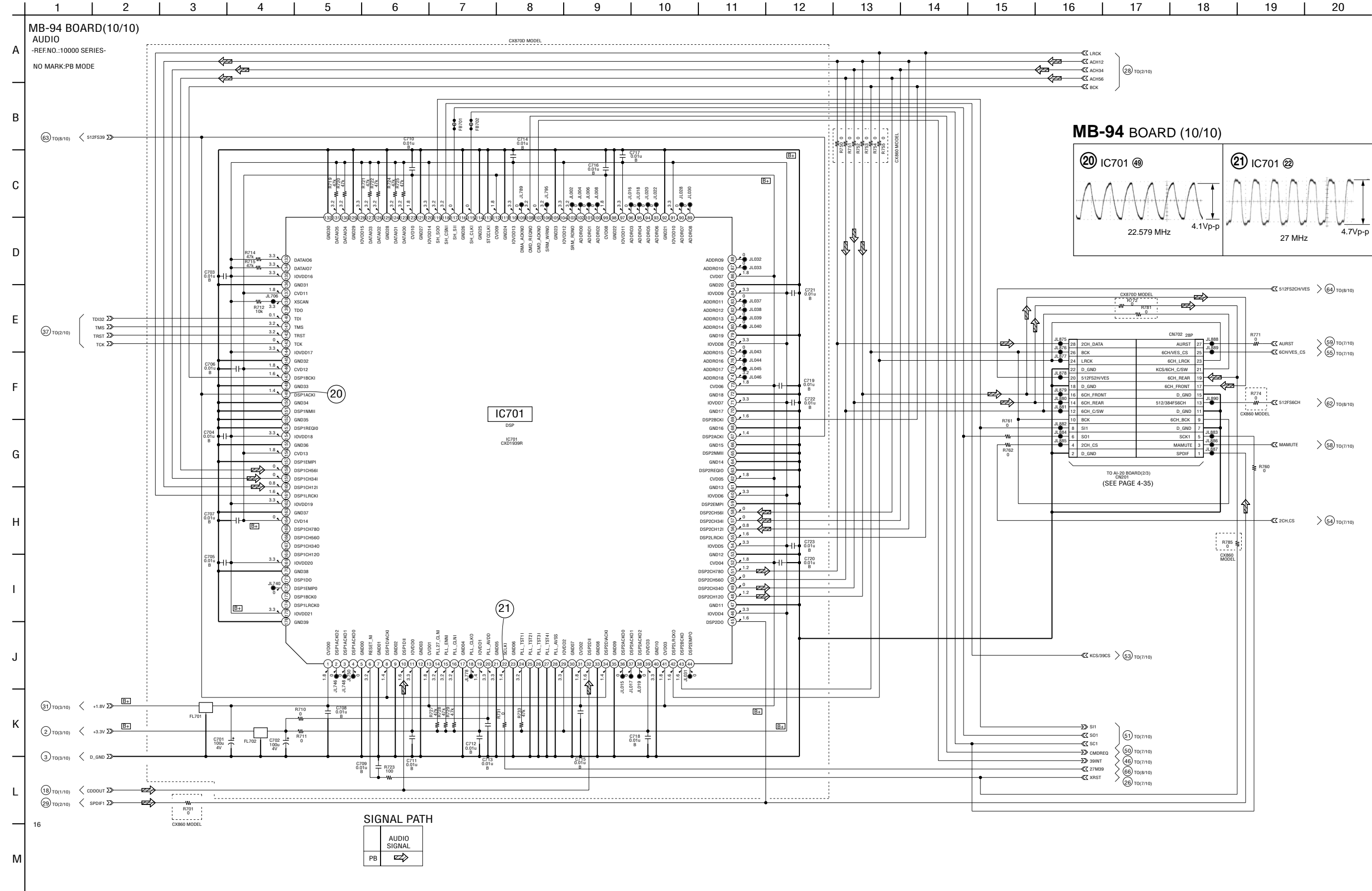


For Schematic Diagram

- Refer to page 4-11 for printed wiring board.

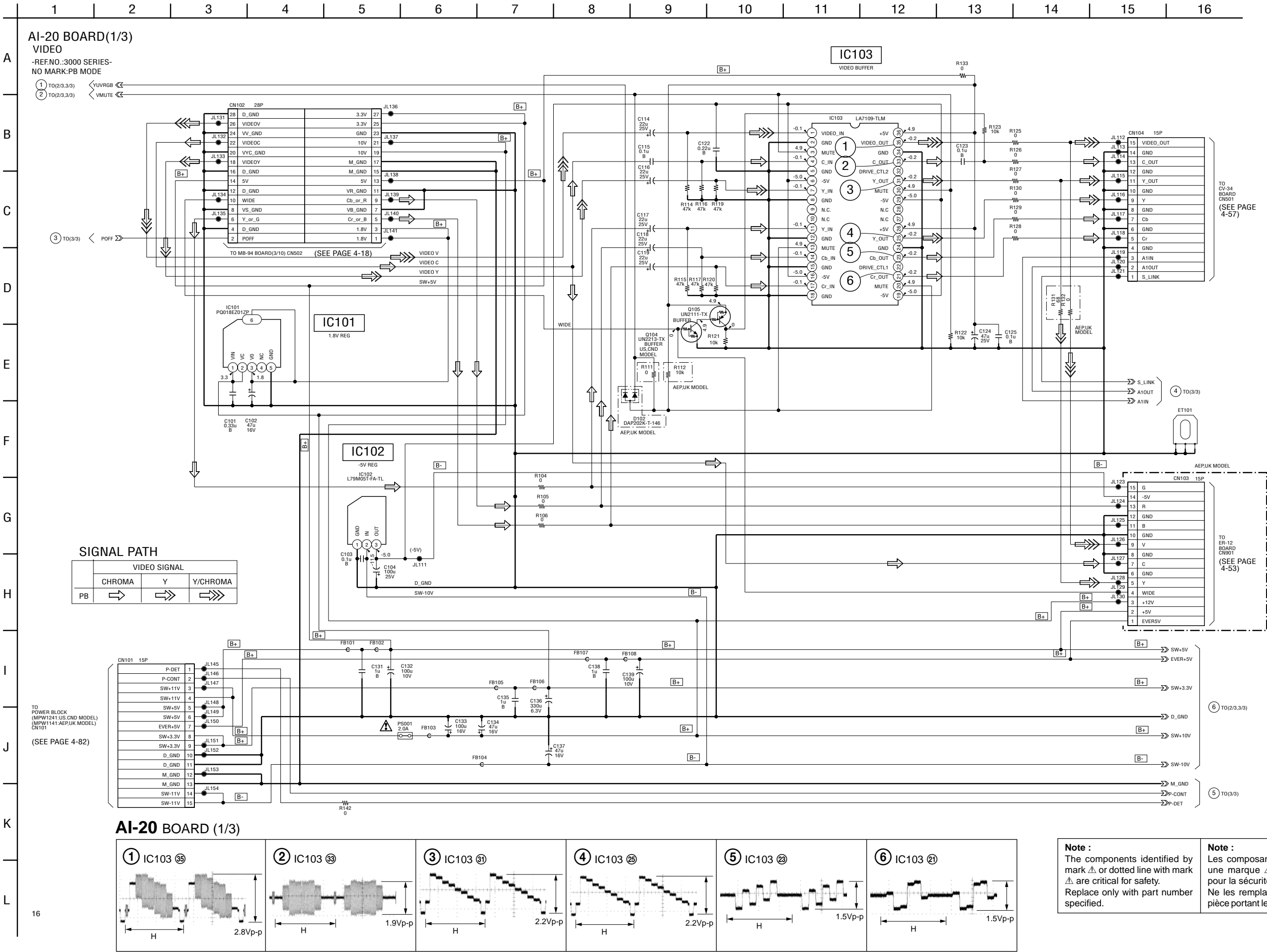


For Schematic Diagram
• Refer to page 4-11 for printed wiring board.



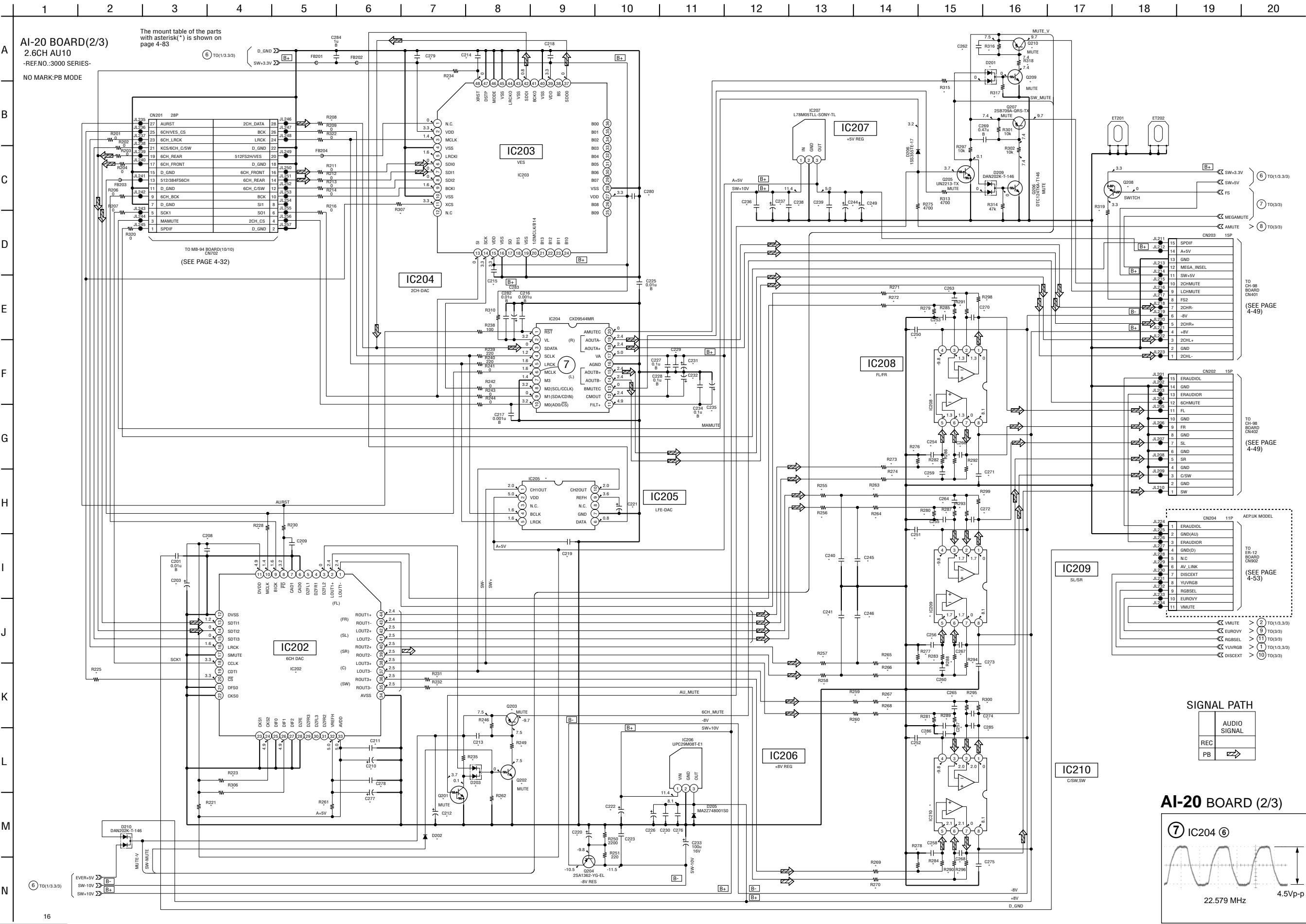
For Schematic Diagram

• Refer to page 4-39 for printed wiring board.



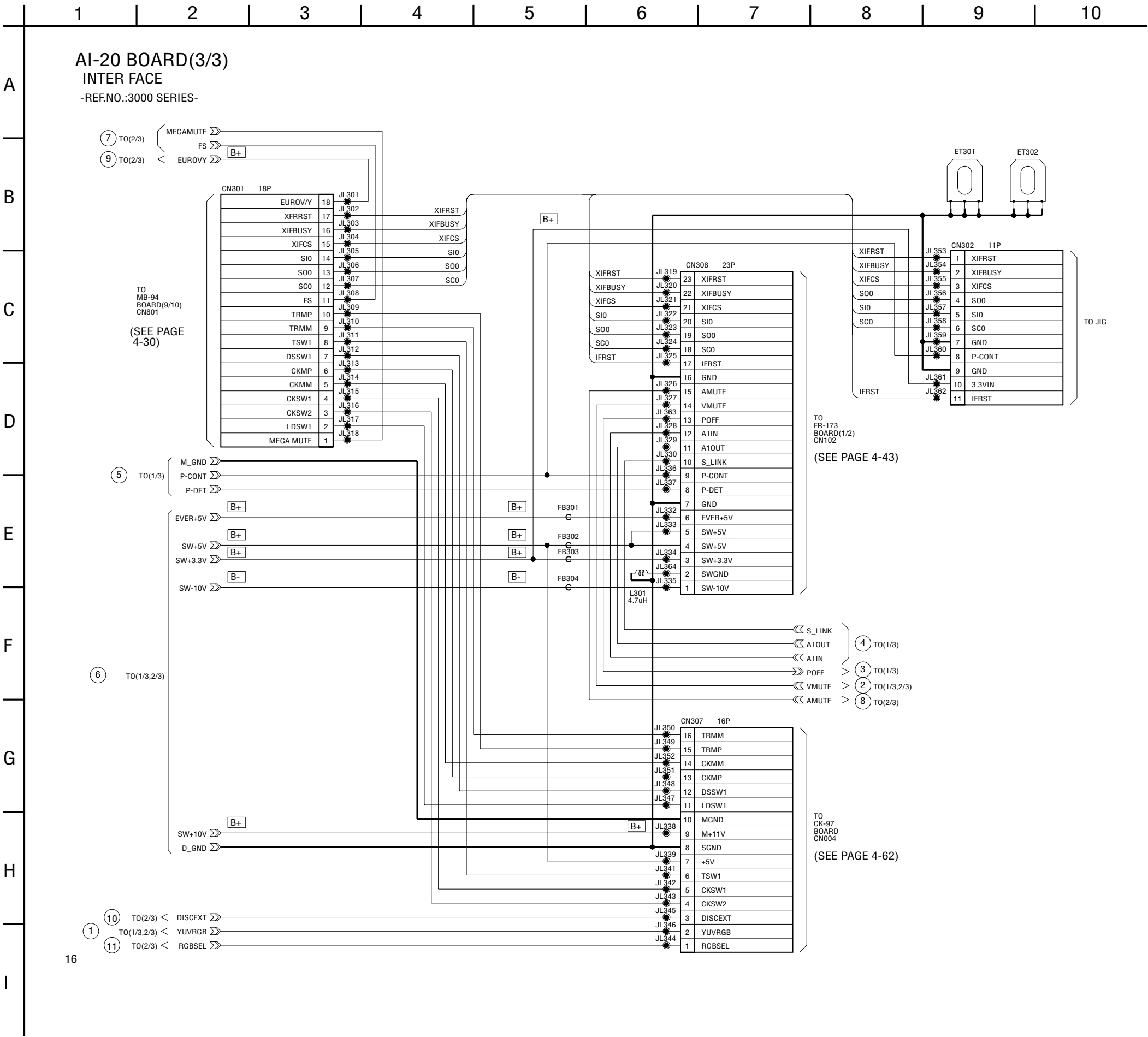
For Schematic Diagram

• Refer to page 4-39 for printed wiring board.

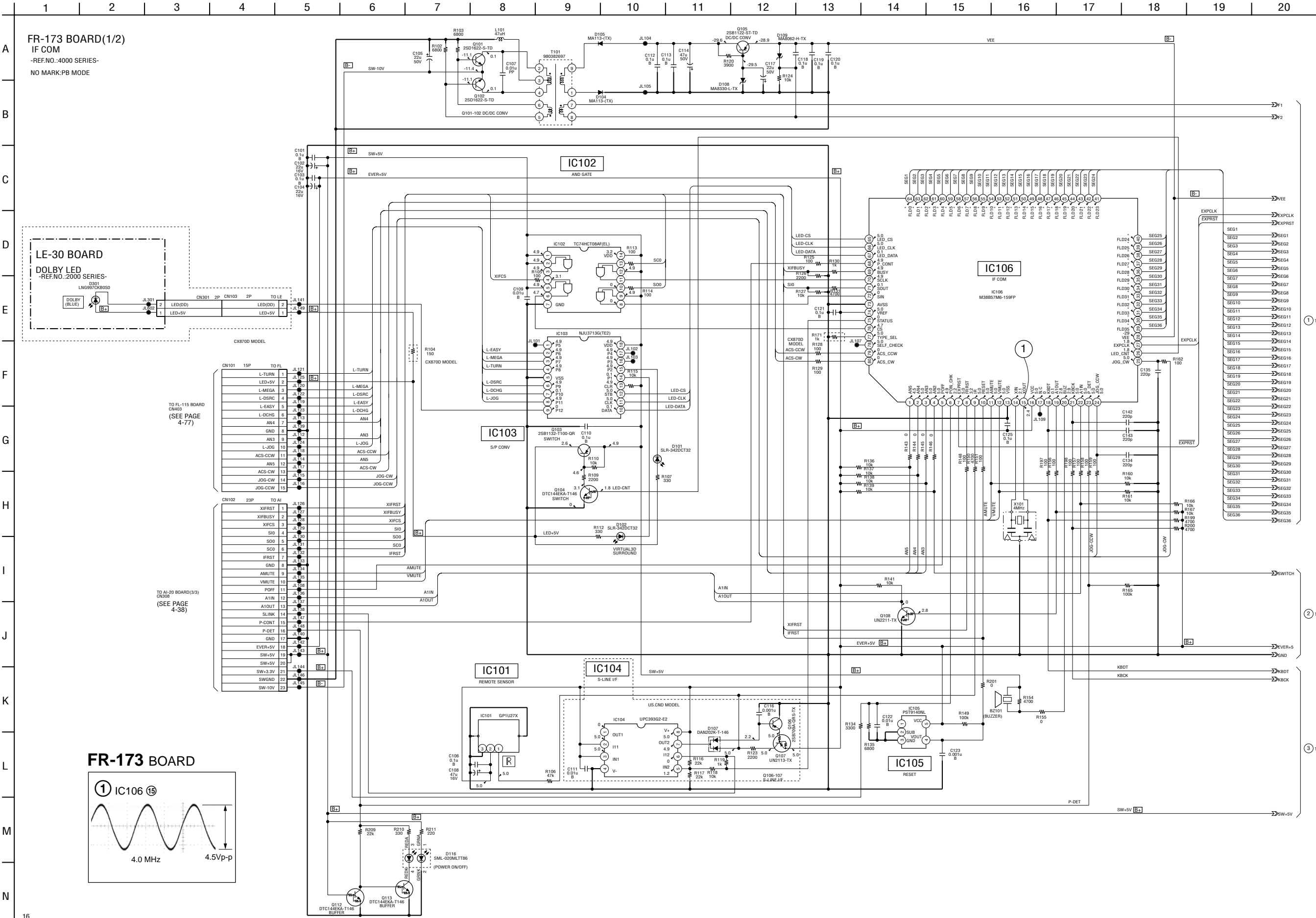


For Schematic Diagram

• Refer to page 4-39 for printed wiring board.

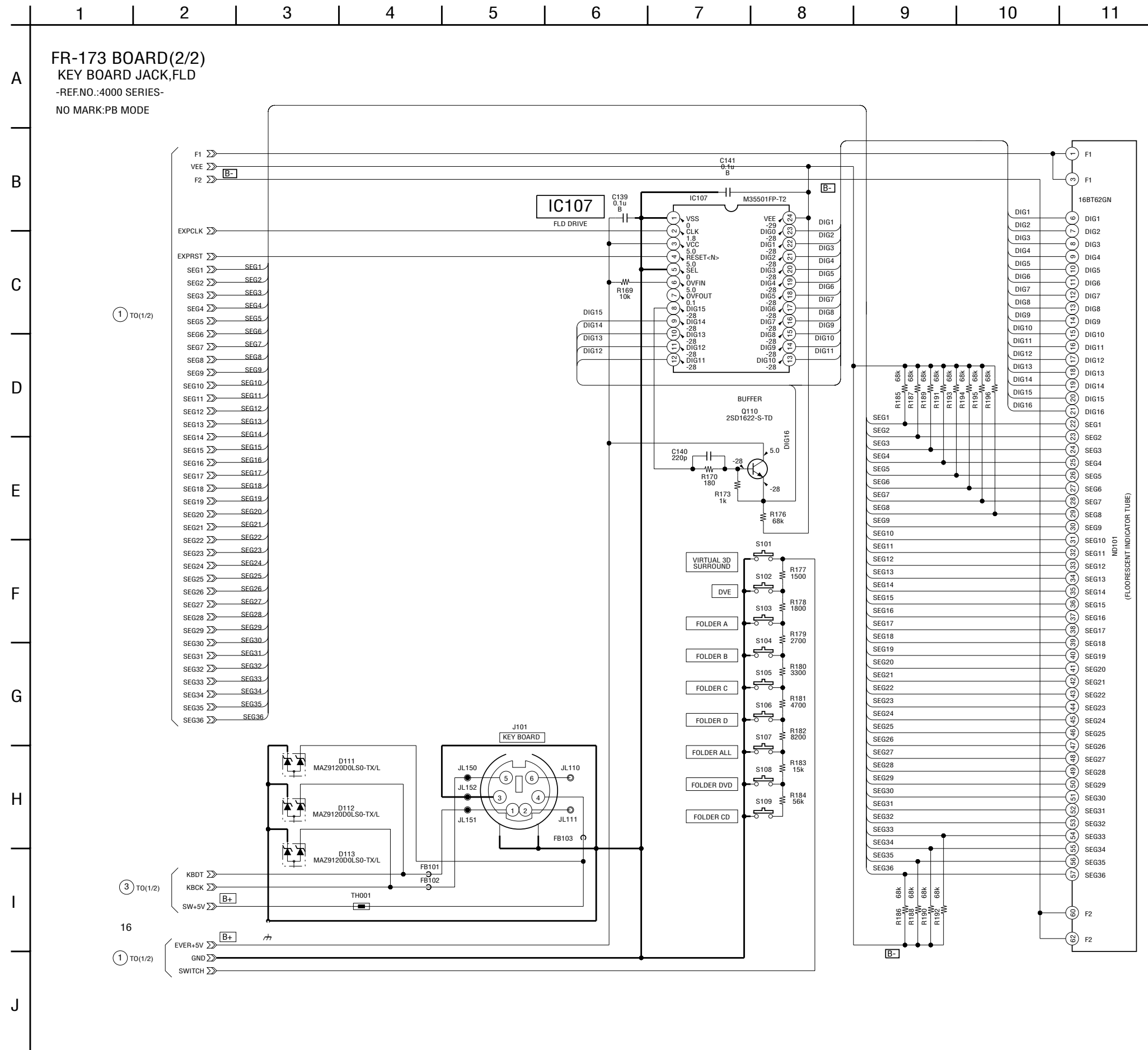


For Schematic Diagram
• Refer to page 4-41 for printed wiring board.



For Schematic Diagram

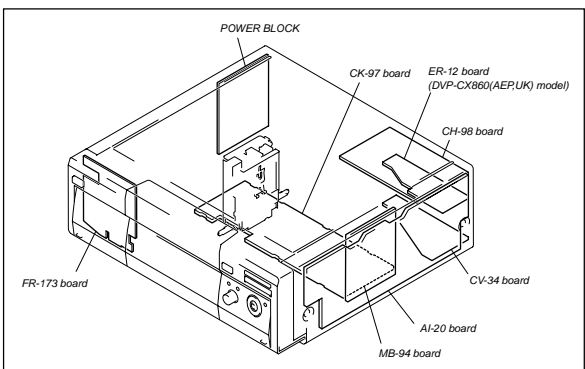
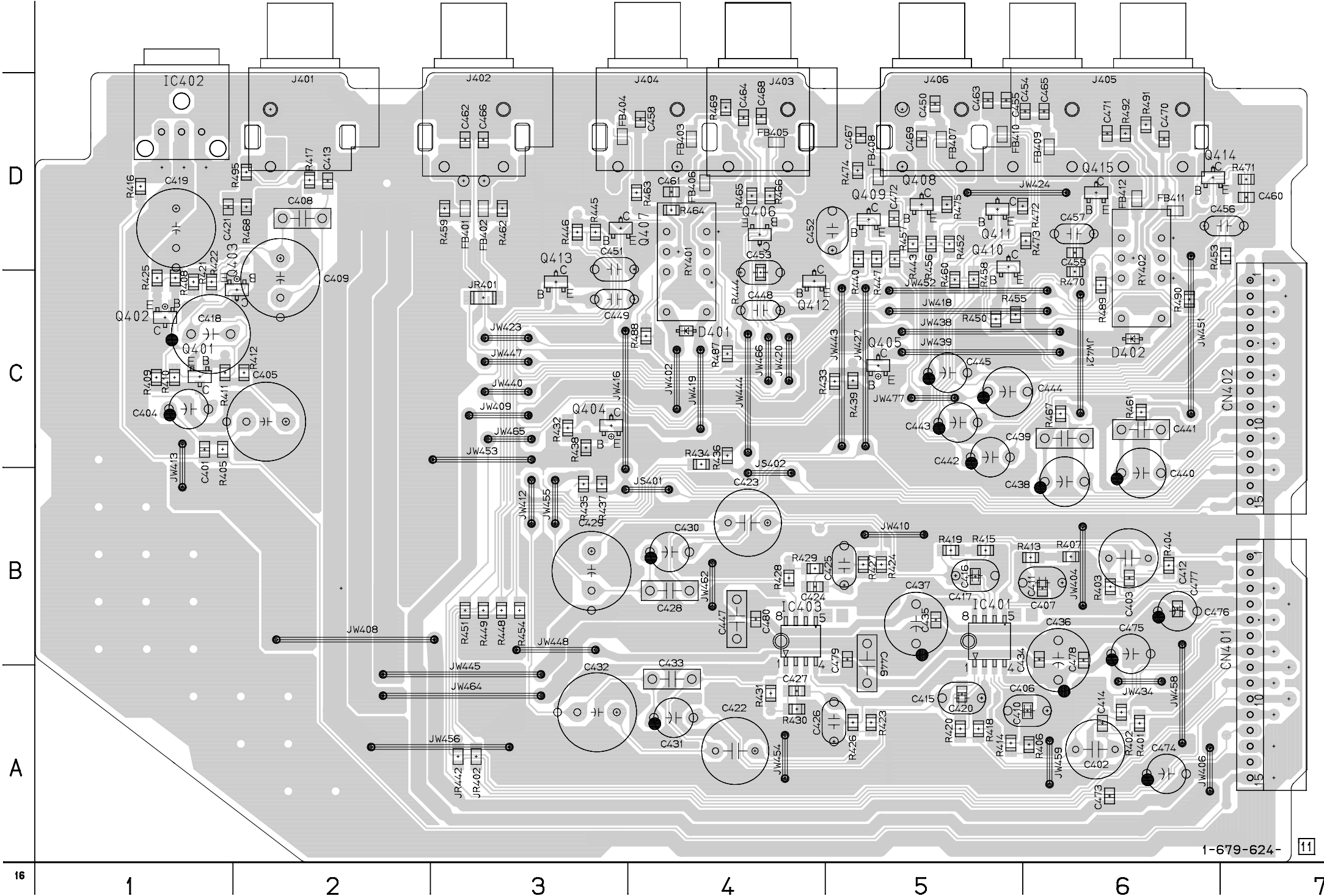
- Refer to page 4-41 for printed wiring board.



CH-98 (AUDIO) PRINTED WIRING BOARD

— Ref. No. CH-98 Board; 1,000 Series —

CH-98 BOARD (SIDE B)

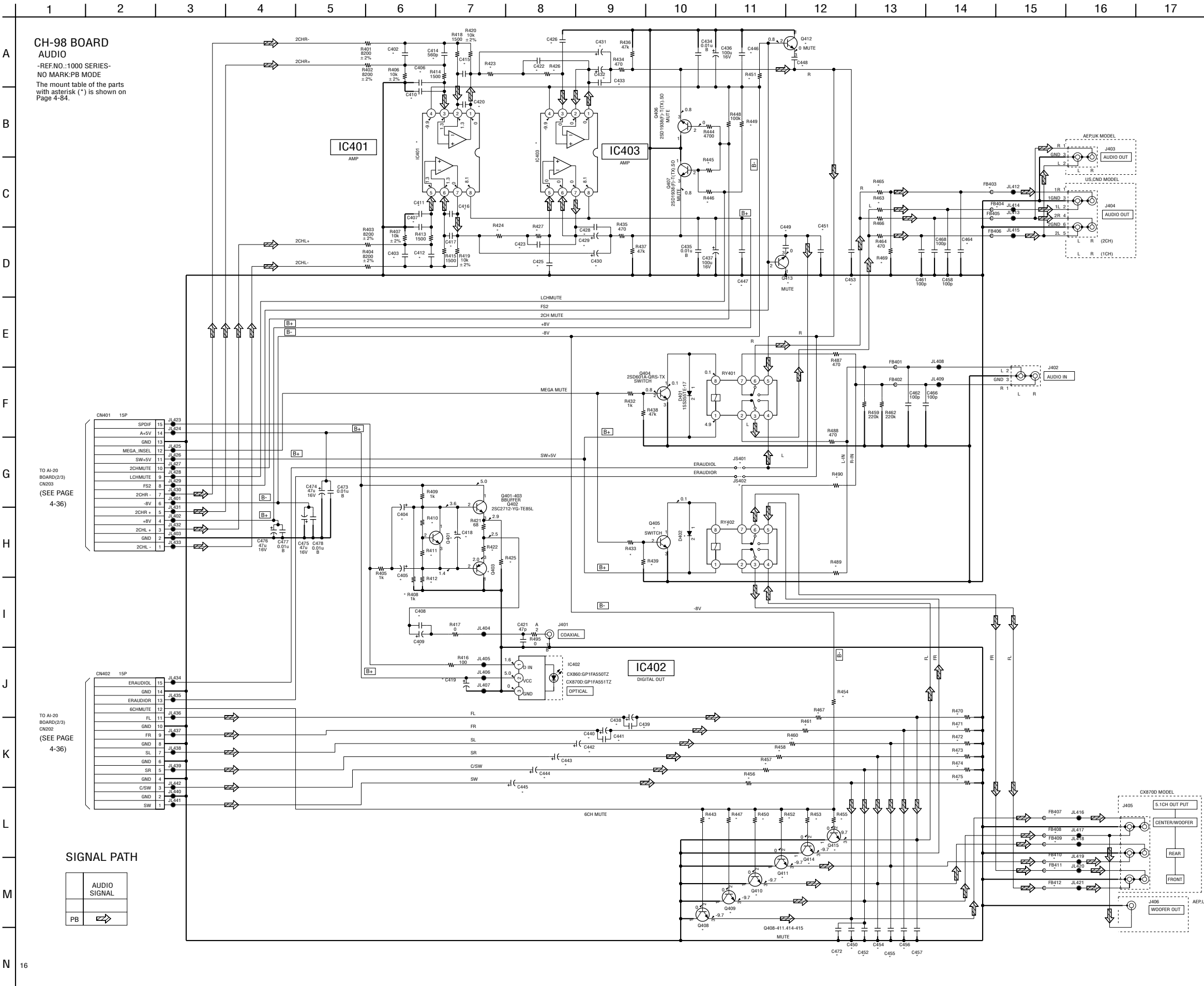


For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.

CH-98 BOARD (SIDE B)

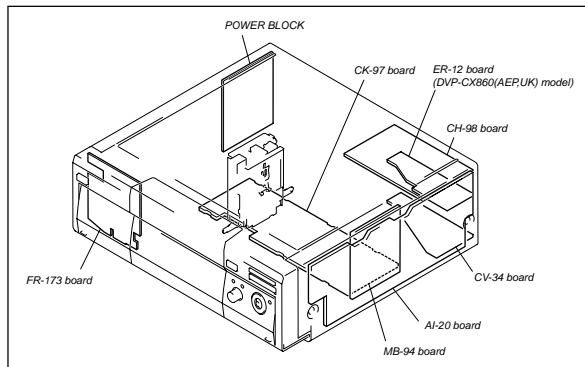
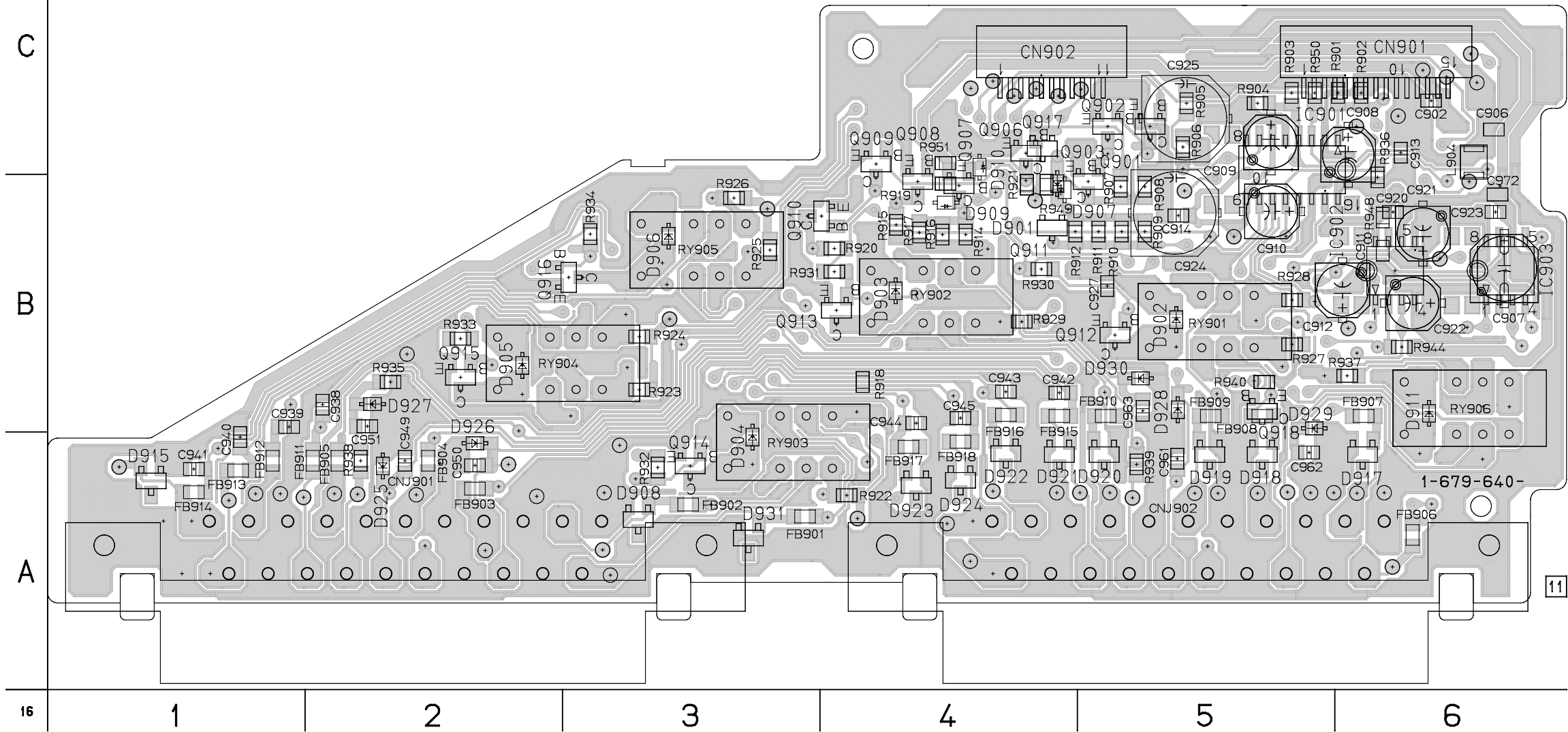
D401	C-3	Q407	D-3
D402	C-6	Q408	D-5
		Q409	D-4
IC401	B-5	Q410	D-5
IC402	D-1	Q411	D-5
IC403	B-4	Q412	C-4
		Q413	C-3
Q401	C-1	Q414	D-6
Q402	C-1	Q415	D-6
Q403	C-2		
Q404	C-3		
Q405	C-4		
Q406	D-4		



ER-12 (EURO AV) PRINTED WIRING BOARD

— Ref. No. ER-12 Board; 1,000 Series —

ER-12 BOARD (SIDE B) (AEP, UK MODEL)



For printed wiring board

- ER-12 board consists of multiple layers. However, only the side (layers) B is shown.
- Chip parts

Diode



There are a few cases that the part printed on this diagram isn't mounted in this model.

ER-12 BOARD (SIDE B)

D901	B-4	D930	A-5
D902	B-5	D931	A-3
D903	B-4		
D904	A-3	IC901	B-5
D905	A-2	IC902	B-6
D906	B-3	IC903	B-6
D907	B-4		
D908	A-3	Q901	B-5
D909	B-4	Q902	B-5
D910	C-4	Q903	B-5
D911	A-6	Q906	B-4
D915	A-1	Q907	B-4
D917	A-6	Q908	B-4
D918	A-5	Q909	B-4
D919	A-5	Q910	B-3
D920	A-5	Q911	B-4
D921	A-4	Q912	A-5
D922	A-4	Q913	B-4
D923	A-4	Q914	A-3
D924	A-4	Q915	A-2
D925	A-2	Q916	B-2
D926	A-2	Q917	C-4
D927	A-2		
D928	A-5		
D929	A-5		

ER-12 BOARD(AEP,UK MODEL)
EURO AV
-REF.NO.:1000 SERIES-
NO MARK:PB MODE

TO AI-20
BOARD(1/3)
(SEE PAGE
4-34)

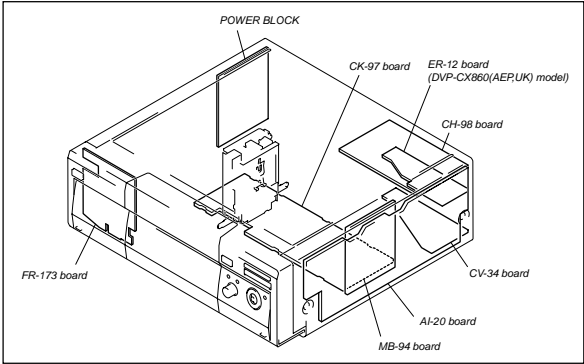
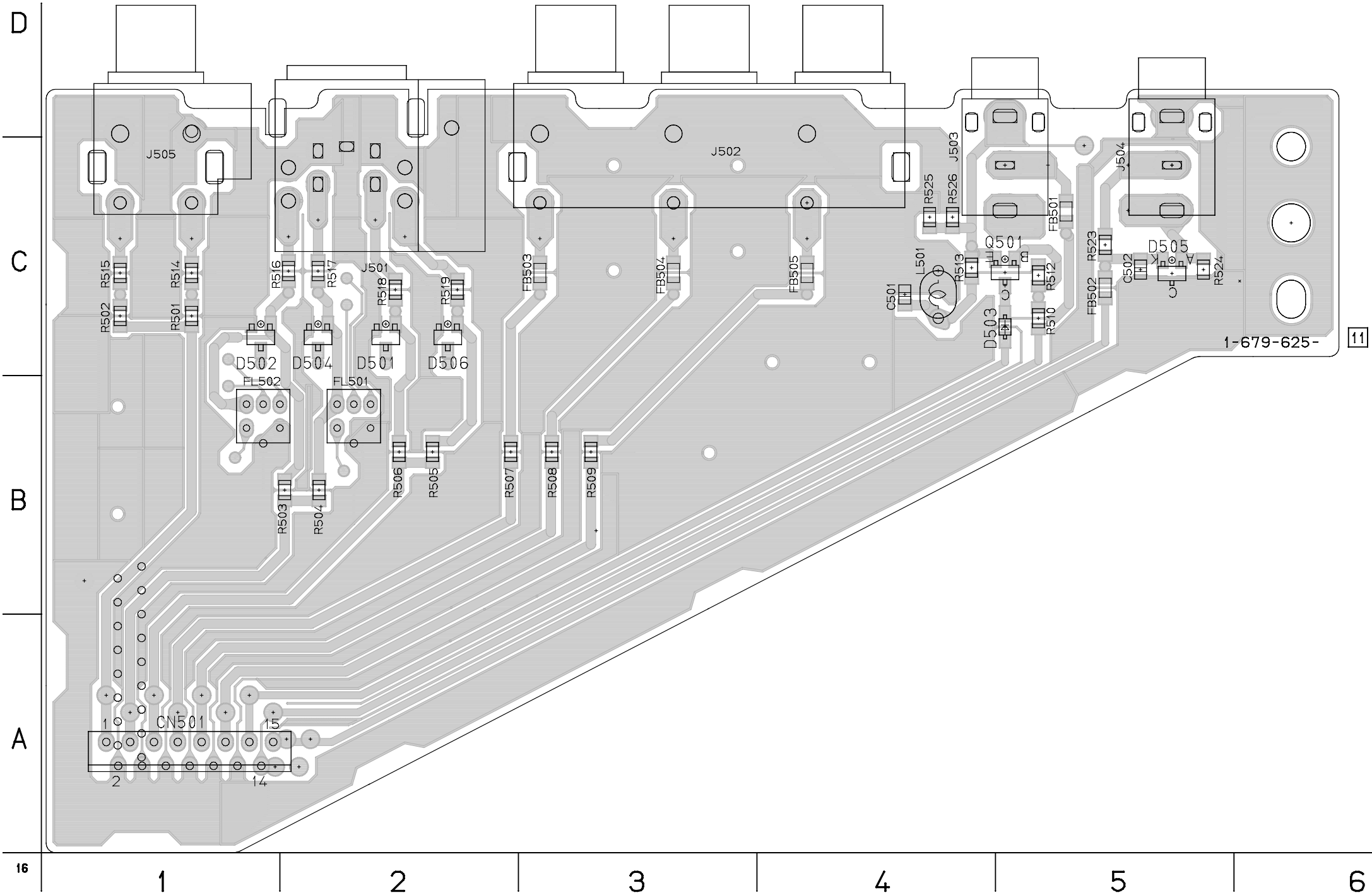
TO AI-20
BOARD
CRO24
(SEE PAGE
4-36)

SIGNAL PATH			
PB	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
	⇒	⇒⇒	⇒⇒⇒

CV-34 (VIDEO OUT) PRINTED WIRING BOARD

— Ref. No. CV-34 Board; 1,000 Series —

CV-34 BOARD (SIDE B)



For printed wiring board

- CV-34 board consists of multiple layers. However, only the side (layers) B is shown.
- Chip parts

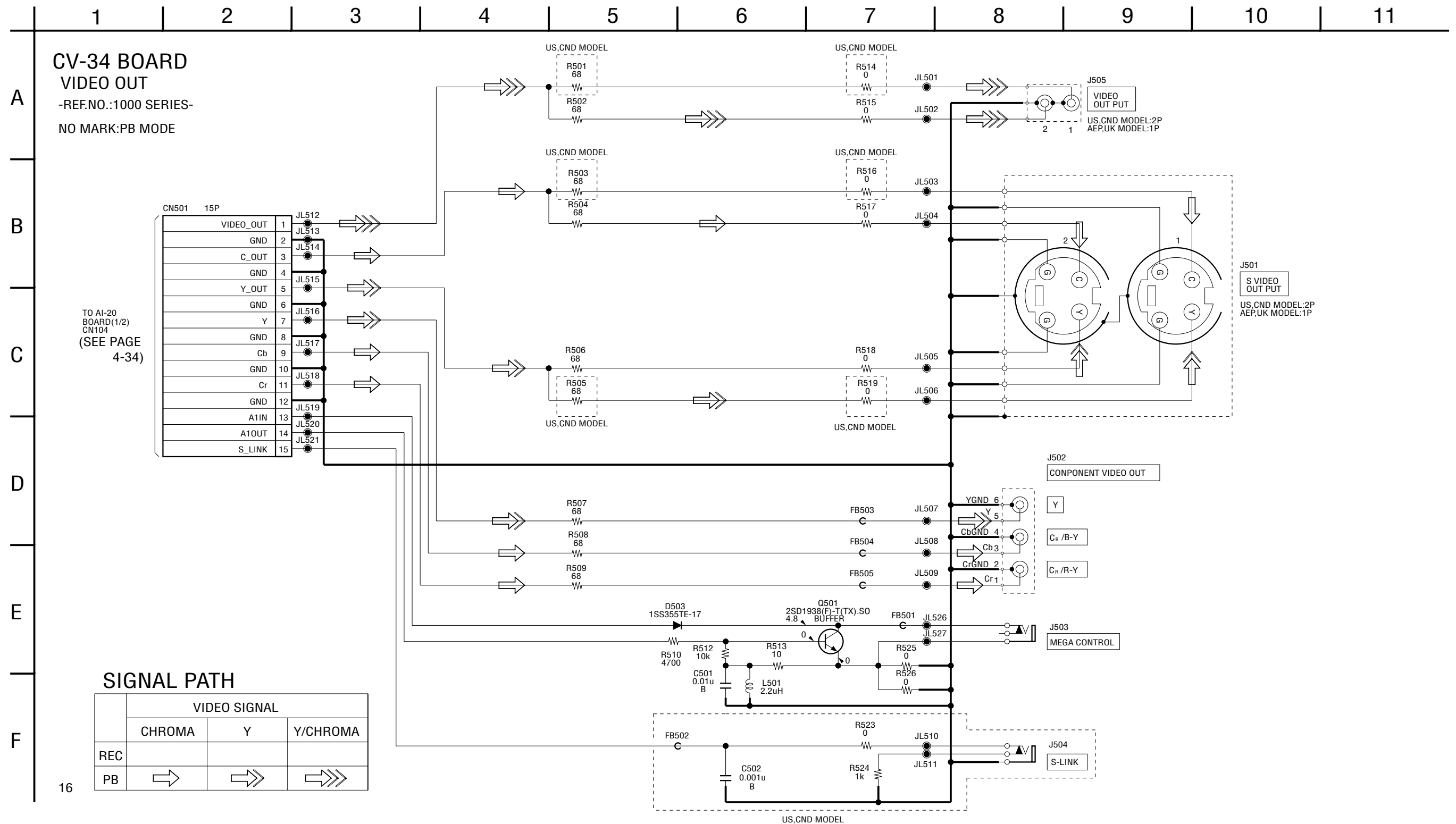
Diode



There are a few cases that the part printed on this diagram isn't mounted in this model.

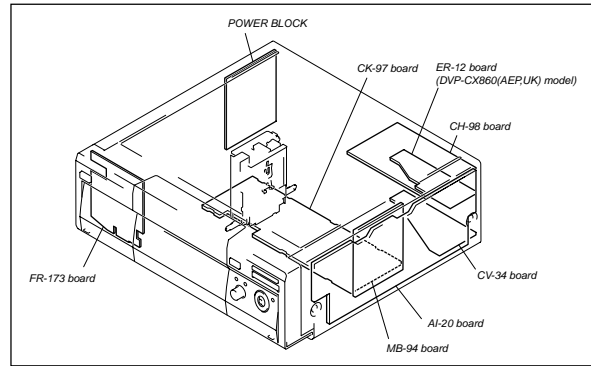
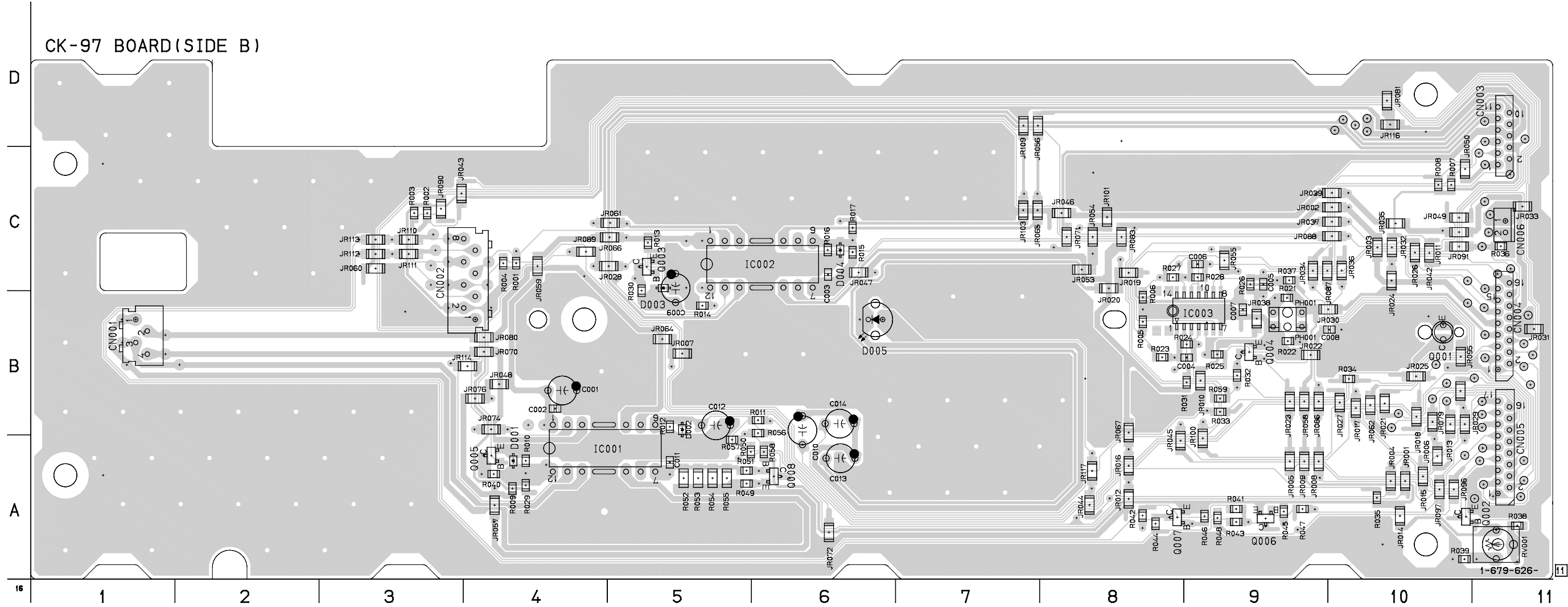
CV-34 BOARD (SIDE B)

D501	C-7
D502	C-7
D503	C-10
D504	C-7
D505	C-11
D506	C-8
Q501	C-10



CK-97 (MOTOR DRIVER) PRINTED WIRING BOARD

— Ref. No. CK-97 Board; 2,000 Series —

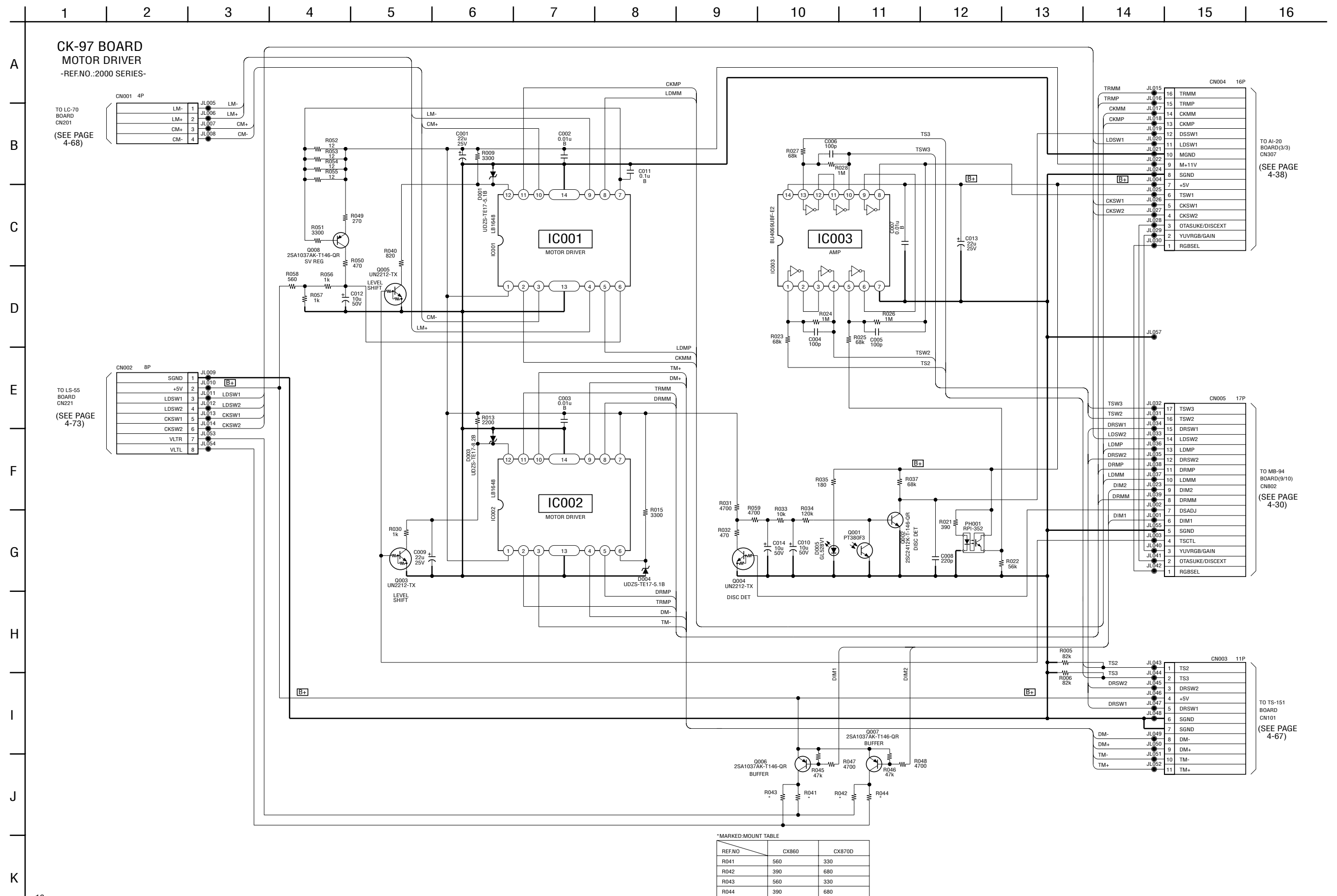


For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.

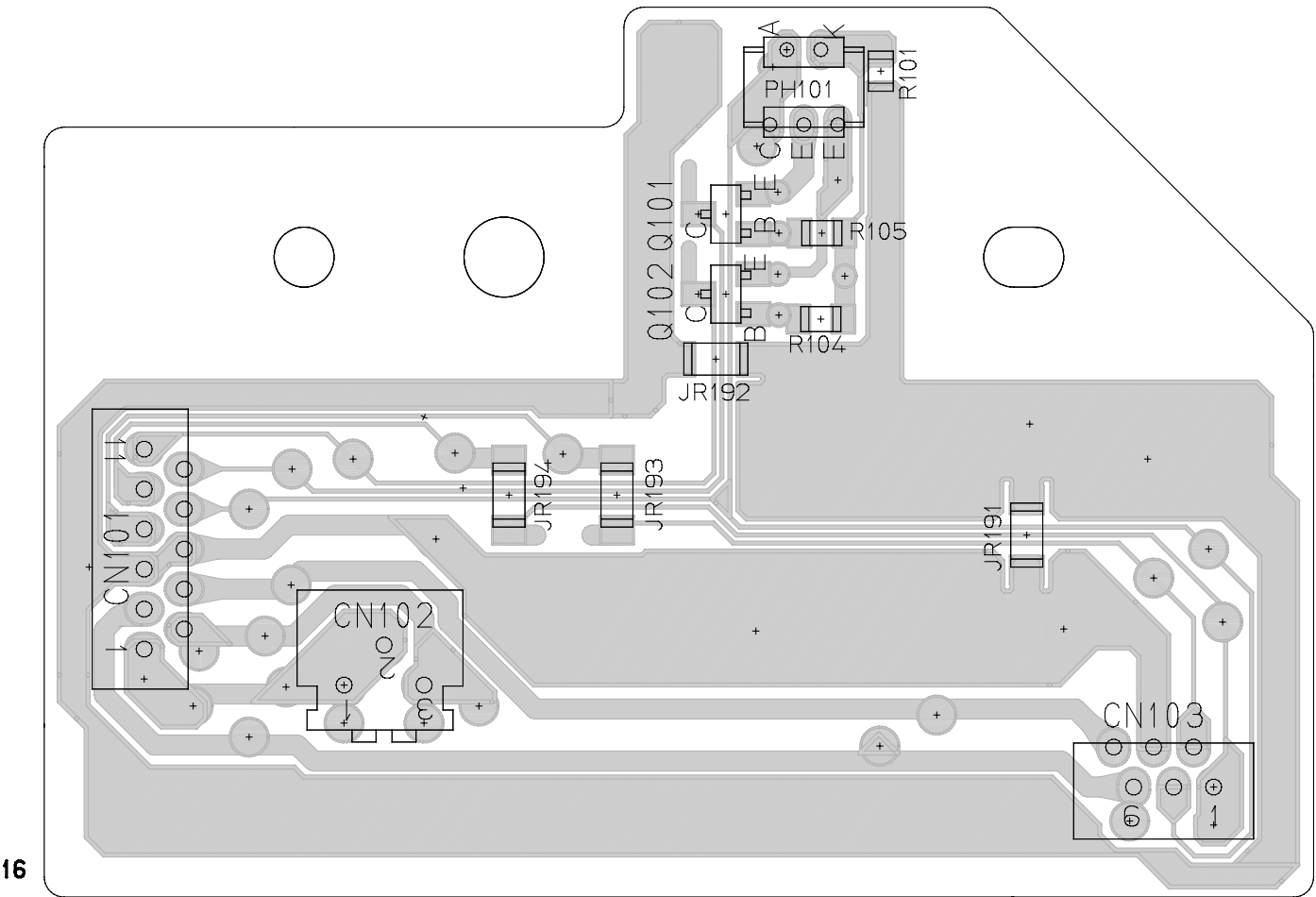
CK-97 BOARD (SIDE B)

- | | |
|-------|------|
| D001 | A-4 |
| D002 | B-5 |
| D003 | C-5 |
| D004 | C-6 |
| D005 | B-6 |
| IC001 | A-4 |
| IC002 | C-6 |
| IC003 | B-9 |
| Q001 | B-10 |
| Q002 | A-10 |
| Q003 | C-5 |
| Q004 | B-9 |
| Q005 | A-4 |
| Q006 | A-9 |
| Q007 | A-8 |
| Q008 | A-6 |



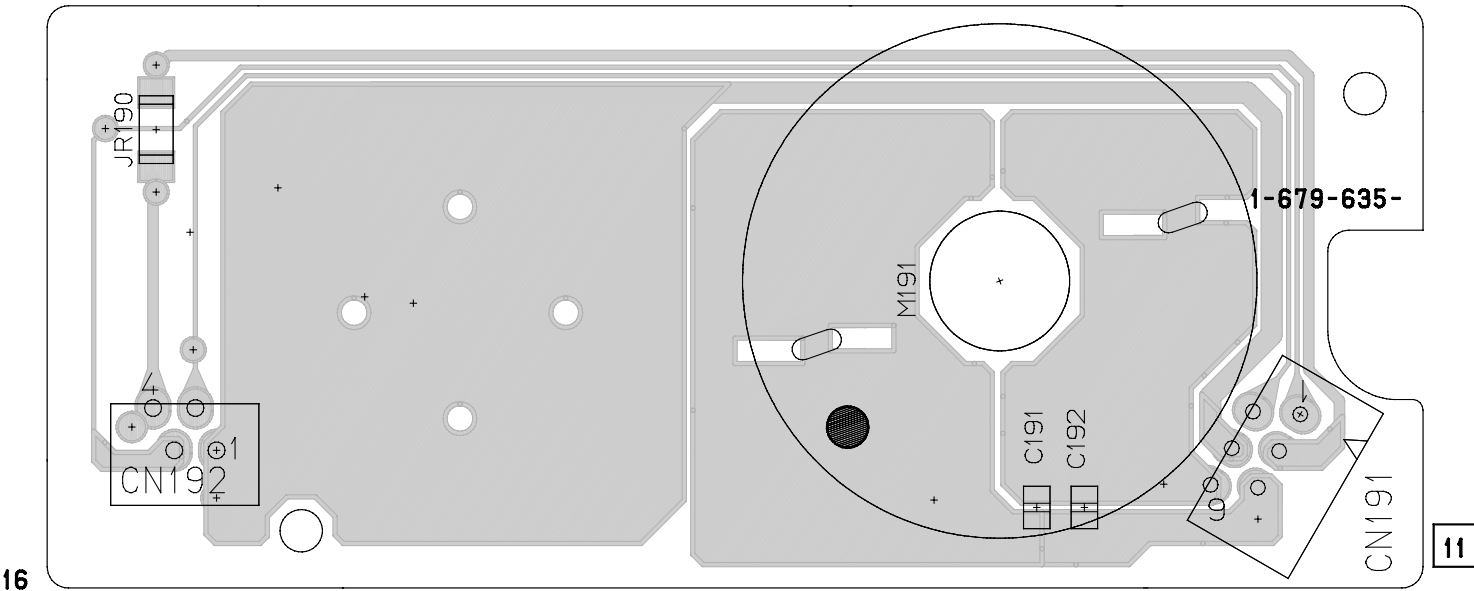
TS-151 (T SENSOR), DM-96 (DOOR MOTOR) PRINTED WIRING BOARDS
— Ref. No. TS-151 Board; 5,000 Series, DM-96 Board; 1,000 Series —

TS-151 BOARD (SIDE B)



16

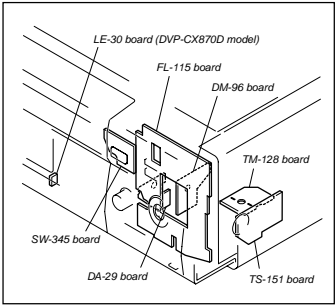
DM-96 BOARD (SIDE B)



16

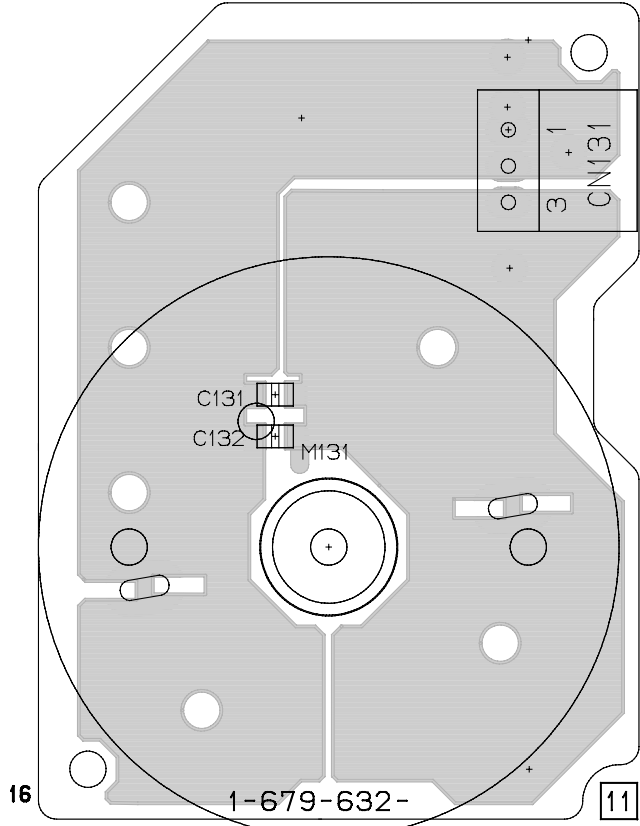
For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.

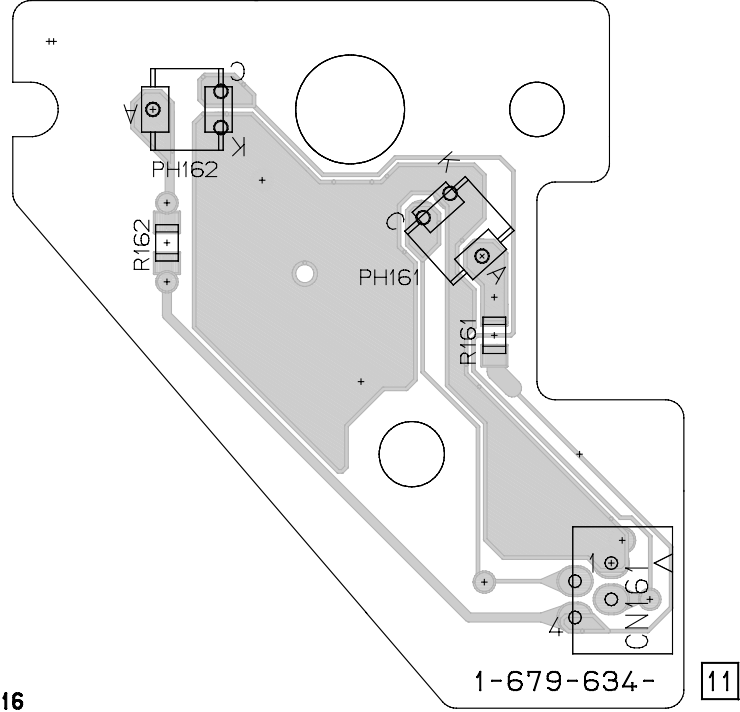


TM-128 (TRAY MOTOR), DA-29 (DR SENSOR), LC-70 (LOADING/CAM MOTOR) PRINTED WIRING BOARDS
— Ref. No. TM-128, DA-29, LC-70 Boards; 1,000 Series —

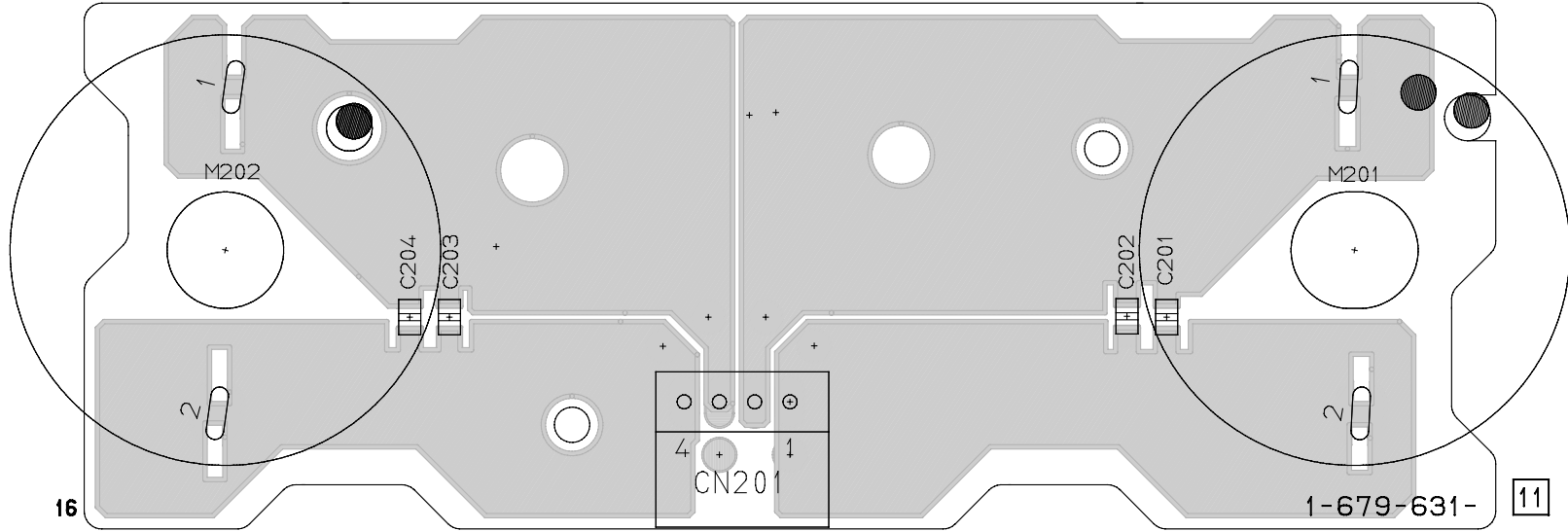
TM-128 BOARD
(SIDE B)



DA-29 BOARD (SIDE B)

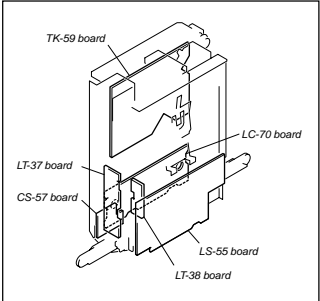
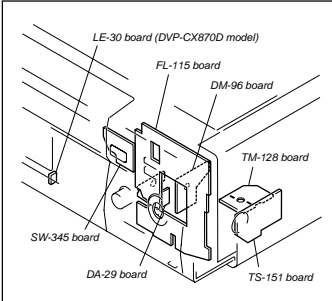


LC-70 BOARD (SIDE B)



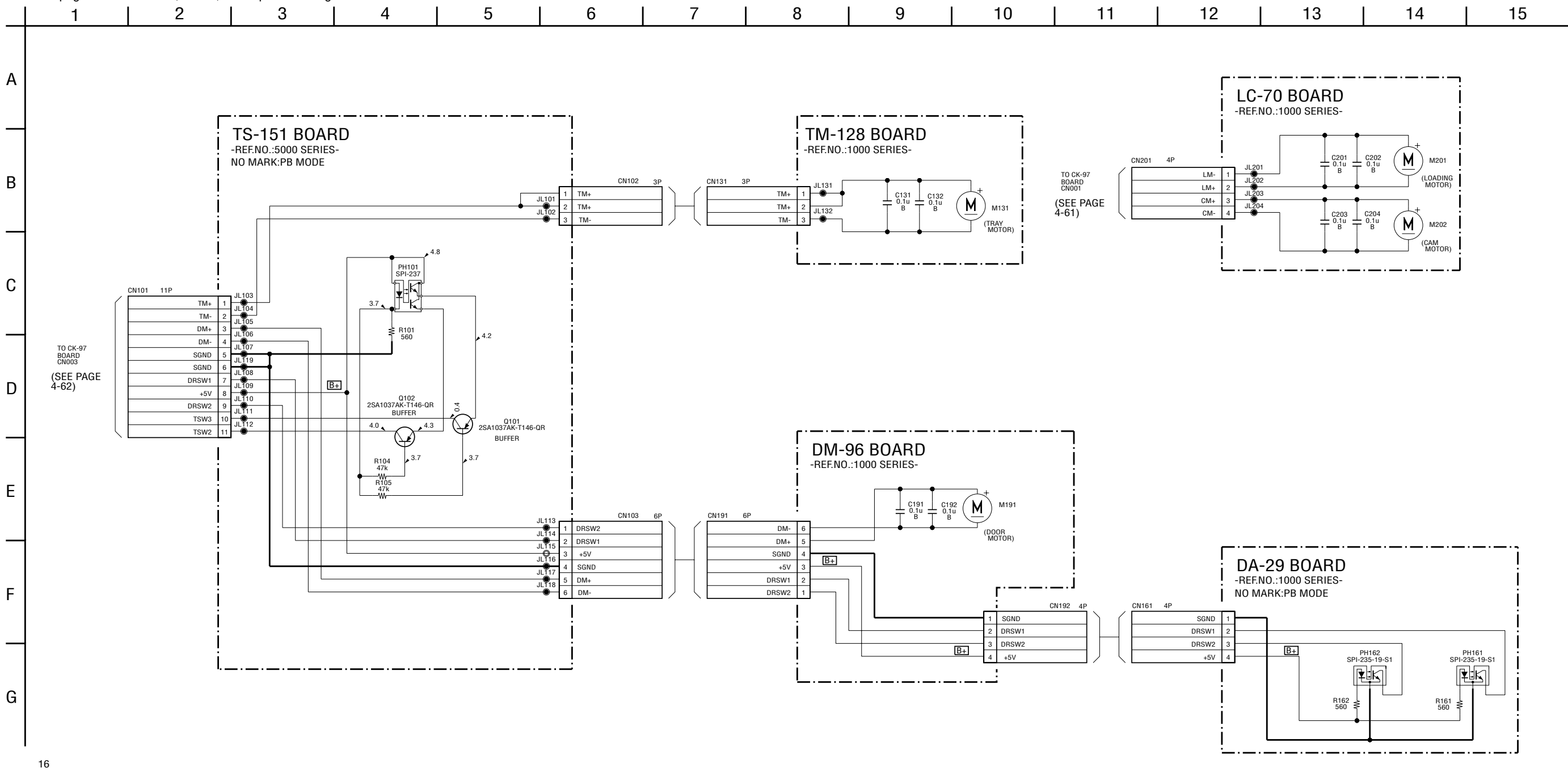
For printed wiring boards

There are a few cases that the part printed on this diagram isn't mounted in this model.



For Schematic Diagram

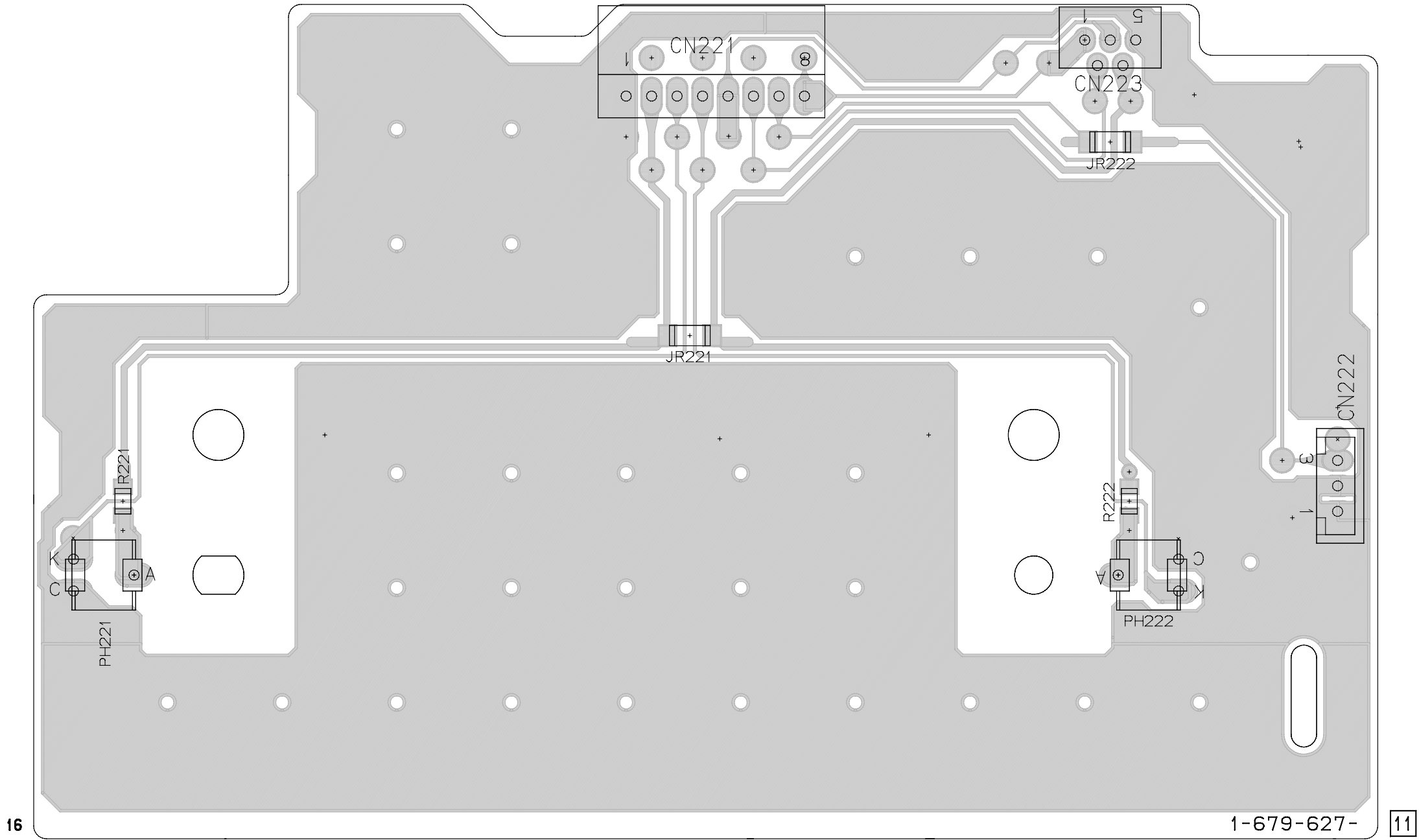
- Refer to page 4-63 for TS-151, DM-96 printed wiring boards.
- Refer to page 4-65 for TM-128, DA-29, LC-70 printed wiring boards.



LS-55 (LD SENSOR) PRINTED WIRING BOARD

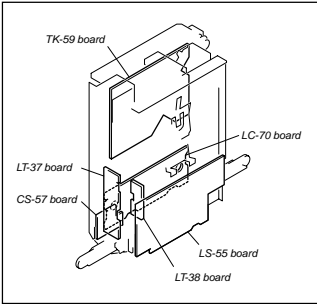
— Ref. No. LS-55 Board; 1,000 Series —

LS-55 BOARD (SIDE B)



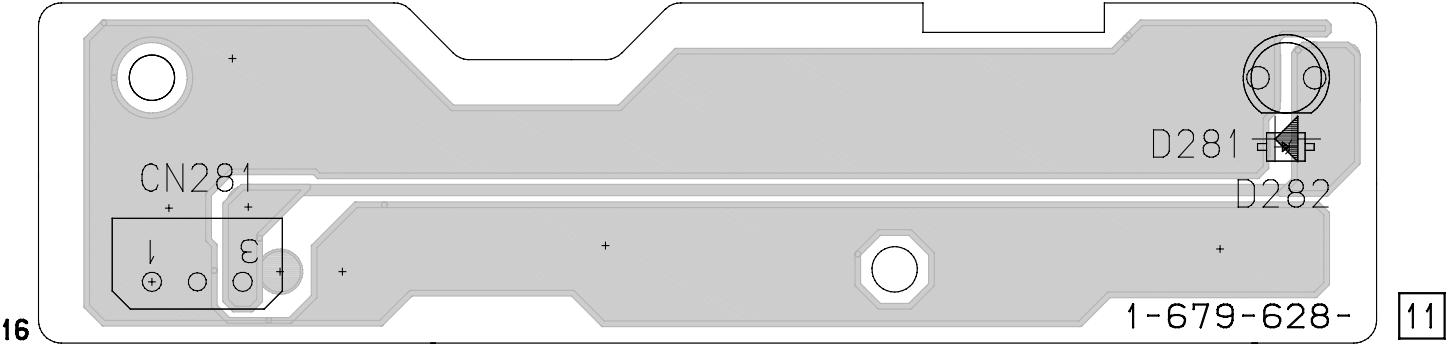
For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.

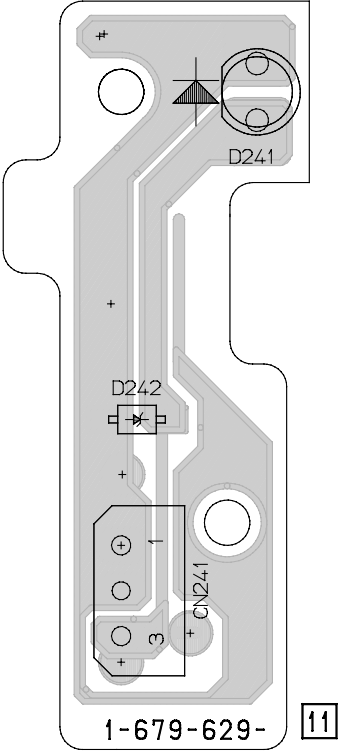


LT-37 (LED), LT-38 (LED), CS-57 (CK SENSOR) PRINTED WIRING BOARDS
— Ref. No. LT-37, LT-38, CS-57 Boards; 1,000 Series —

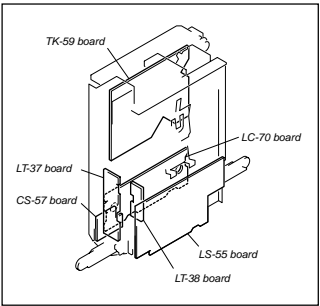
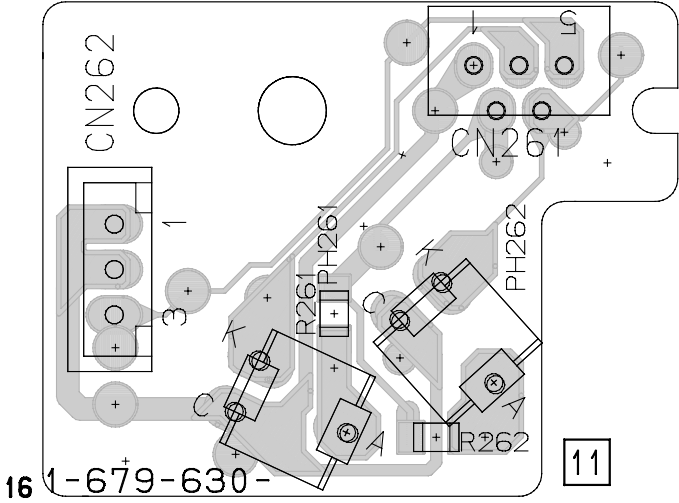
LT-37 BOARD (SIDE B)



LT-38 BOARD
(SIDE B)



CS-57 BOARD
(SIDE B)

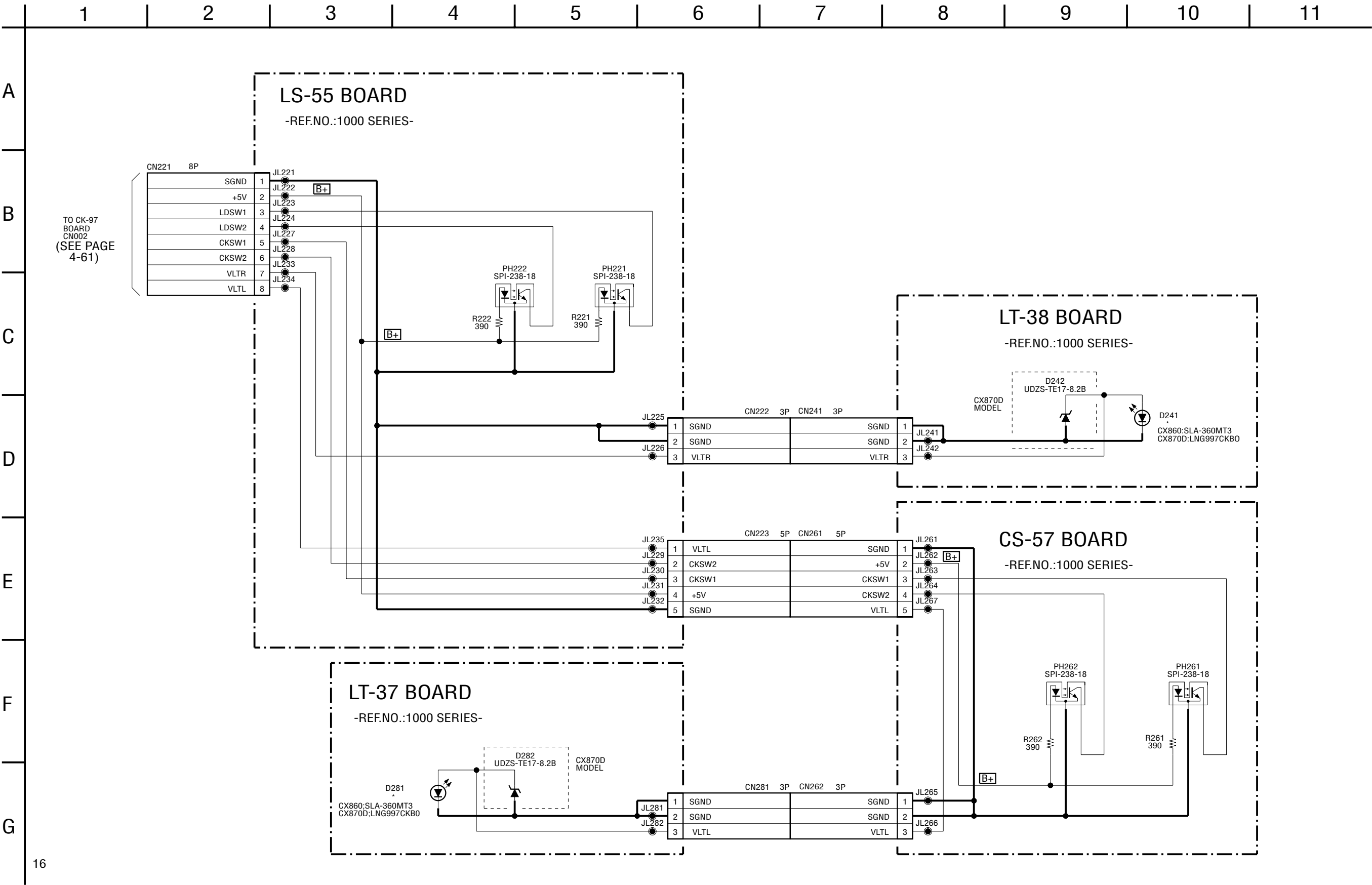


For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.

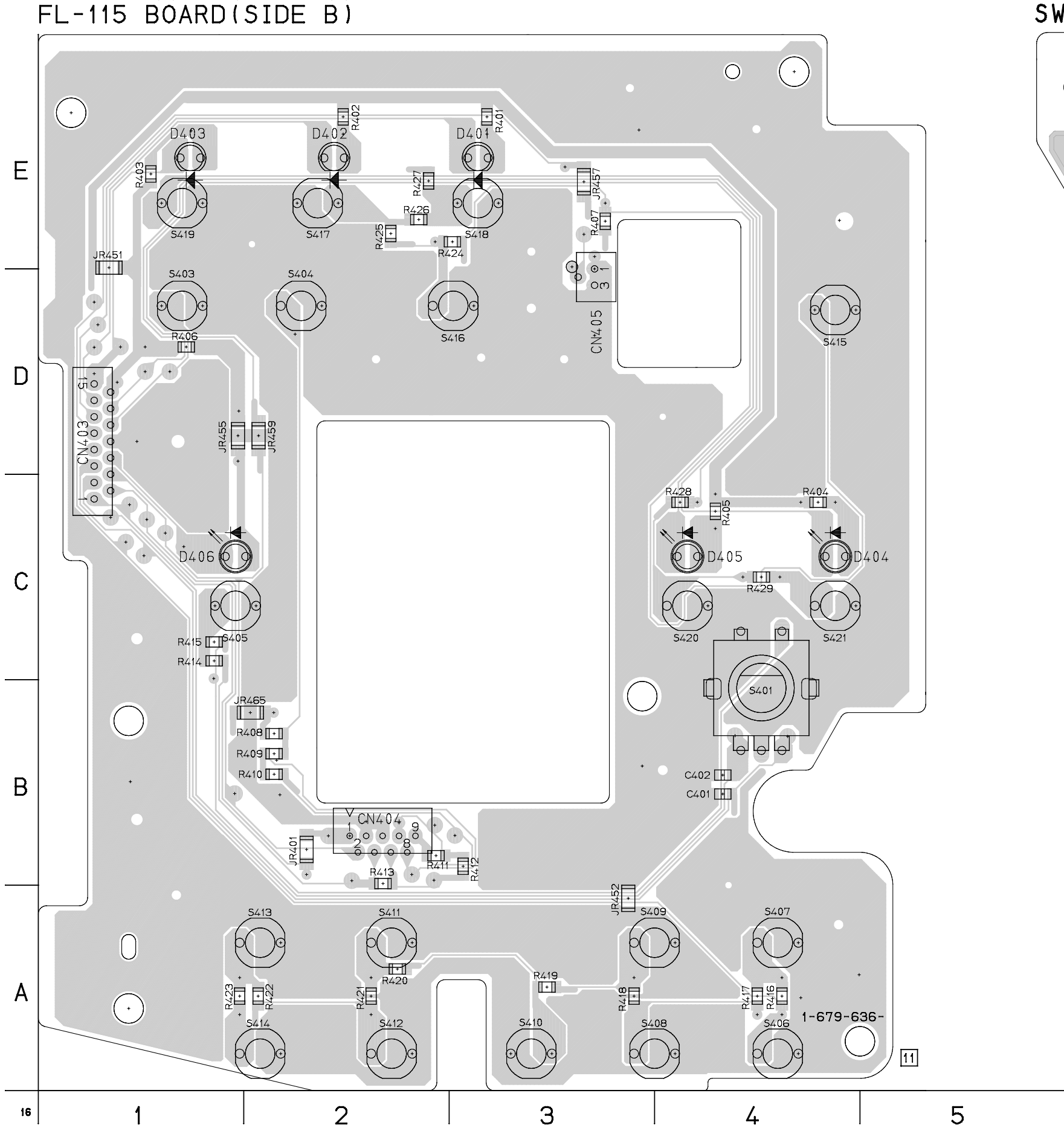
For Schematic Diagram

• Refer to page 4-69 for LS-55 printed wiring board.

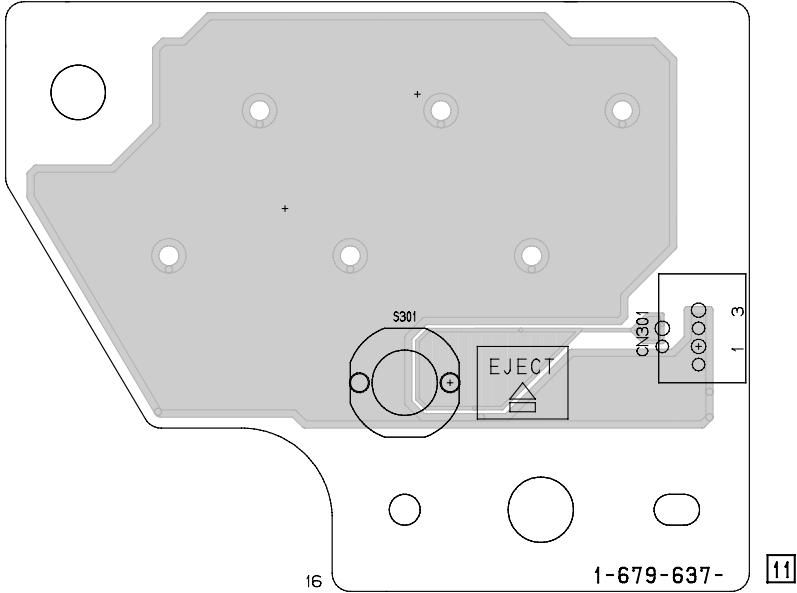


FL-115 (DISPLAY CONTROL), SW-345 (EJECT SW) PRINTED WIRING BOARDS

— Ref. No. FL-115 Board; 2,000 Series, SW-345 Board; 1,000 Series —



SW-345 BOARD

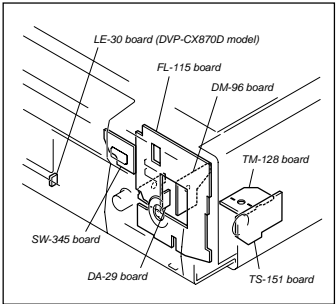


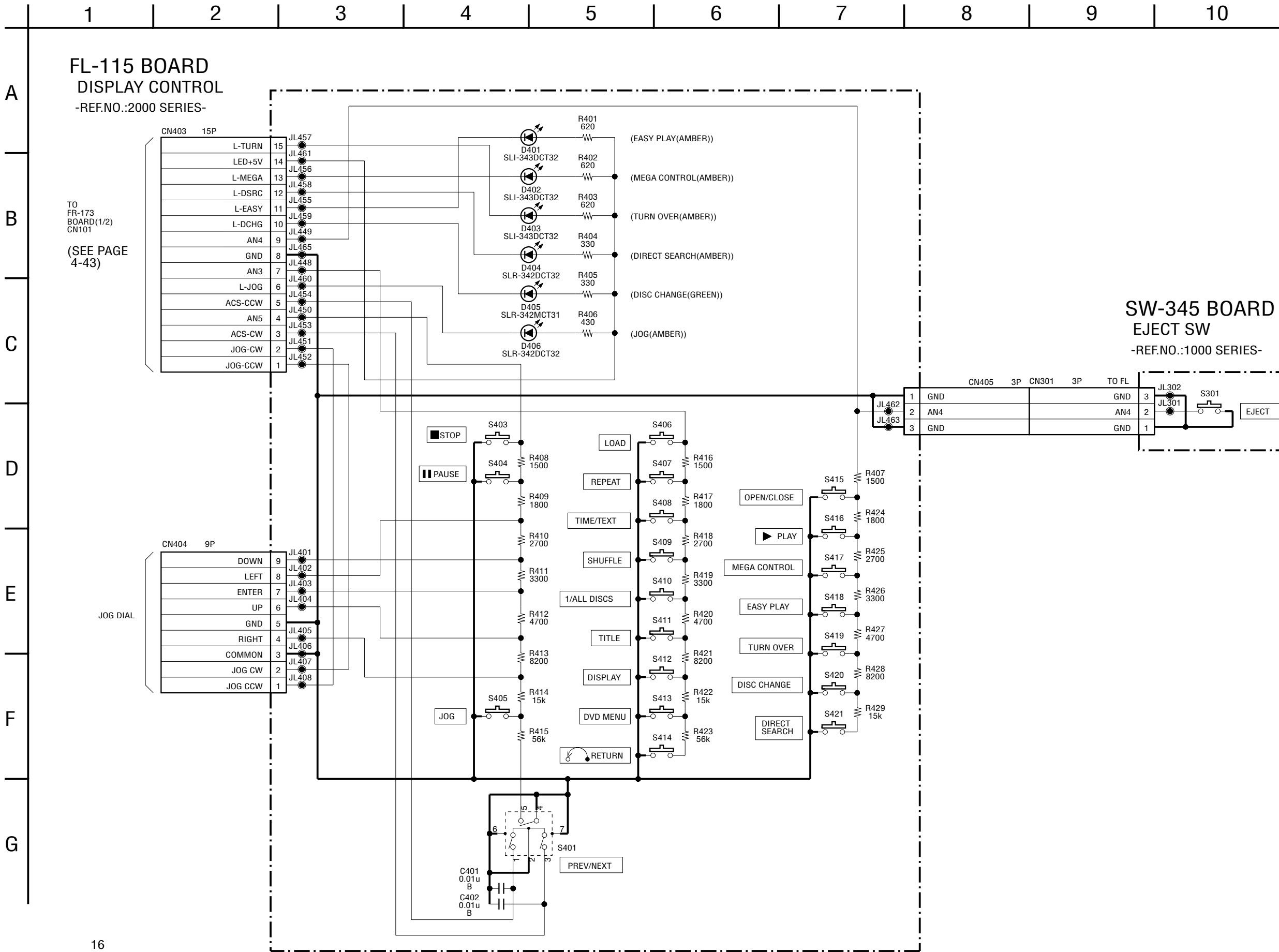
FL-115 BOARD (SIDE A)

- D401 E-3
- D402 E-3
- D403 E-4
- D404 C-1
- D405 C-2
- D406 C-4

For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.

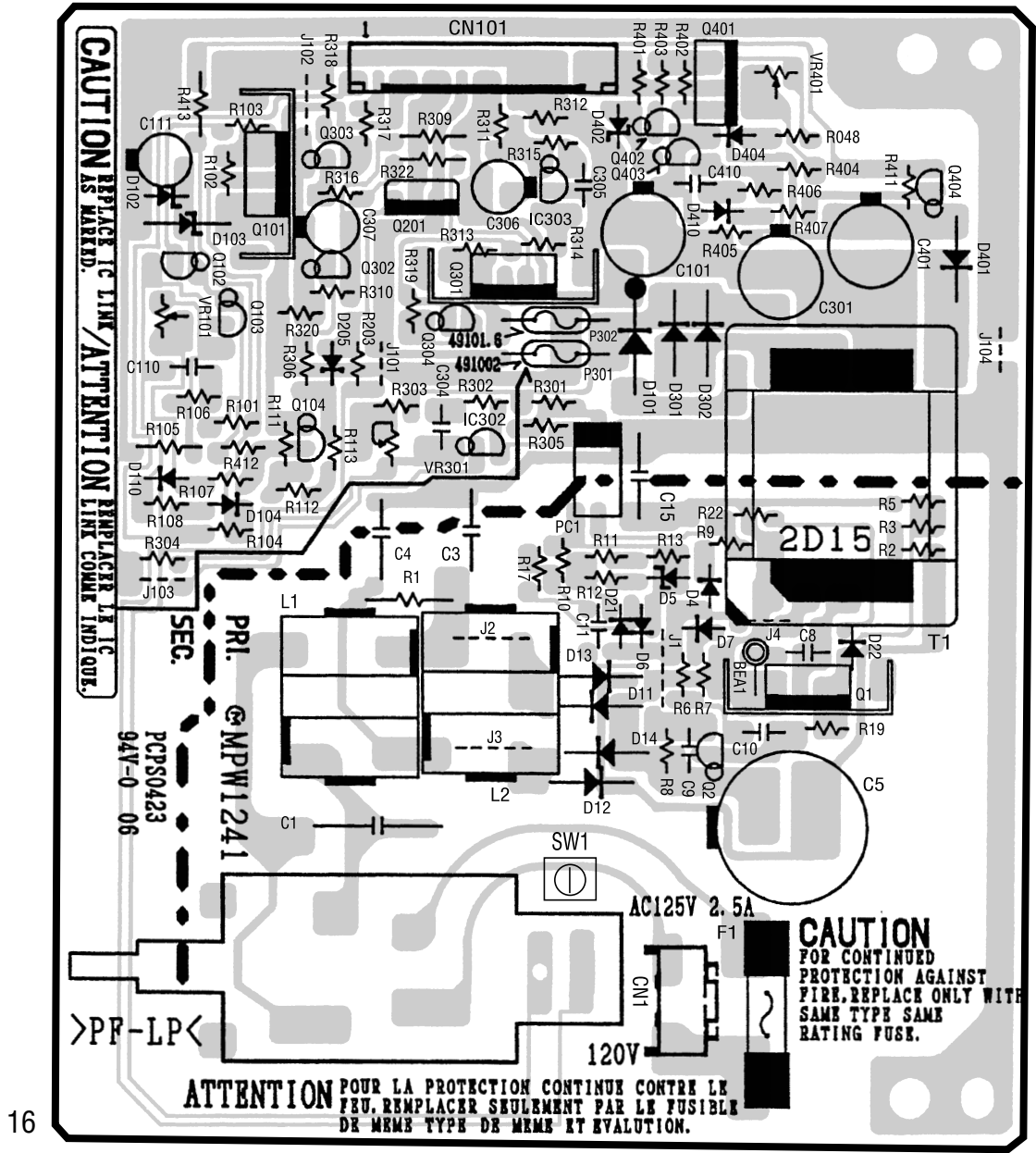




POWER BLOCK (MPW1241)(US, CND MODEL), POWER BLOCK (MPW1141)(AEP, UK MODEL) PRINTED WIRING BOARDS

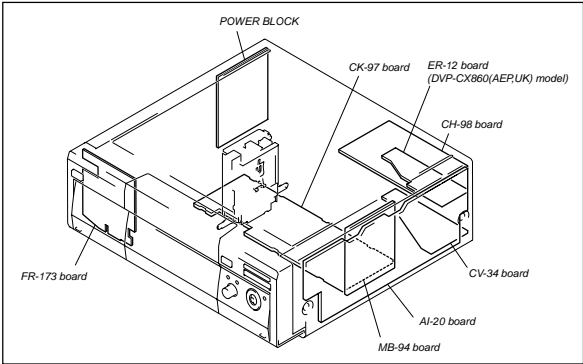
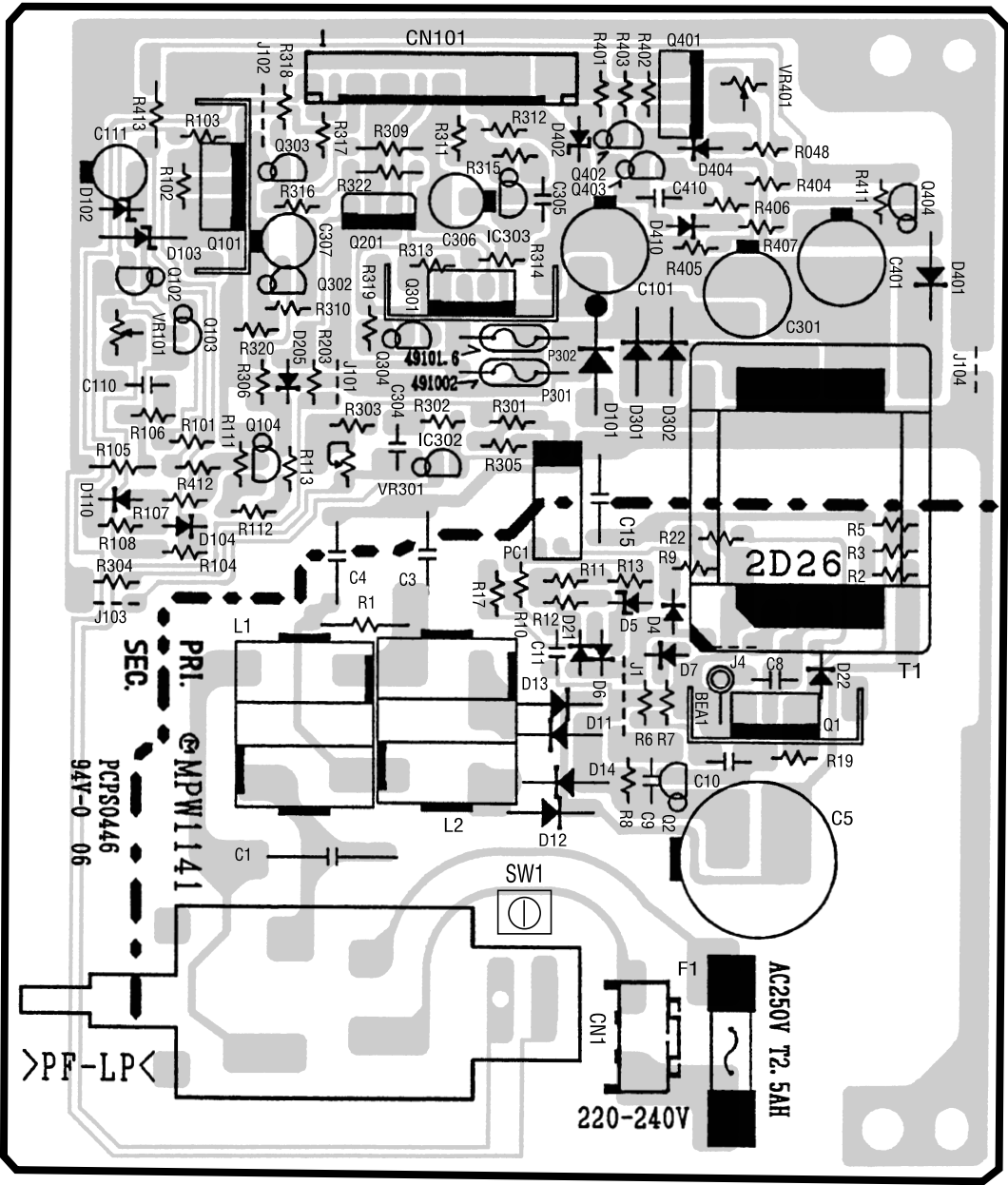
— Ref. No. Power Block (MPW1241)(MPW1141) Board; 6,000 Series —

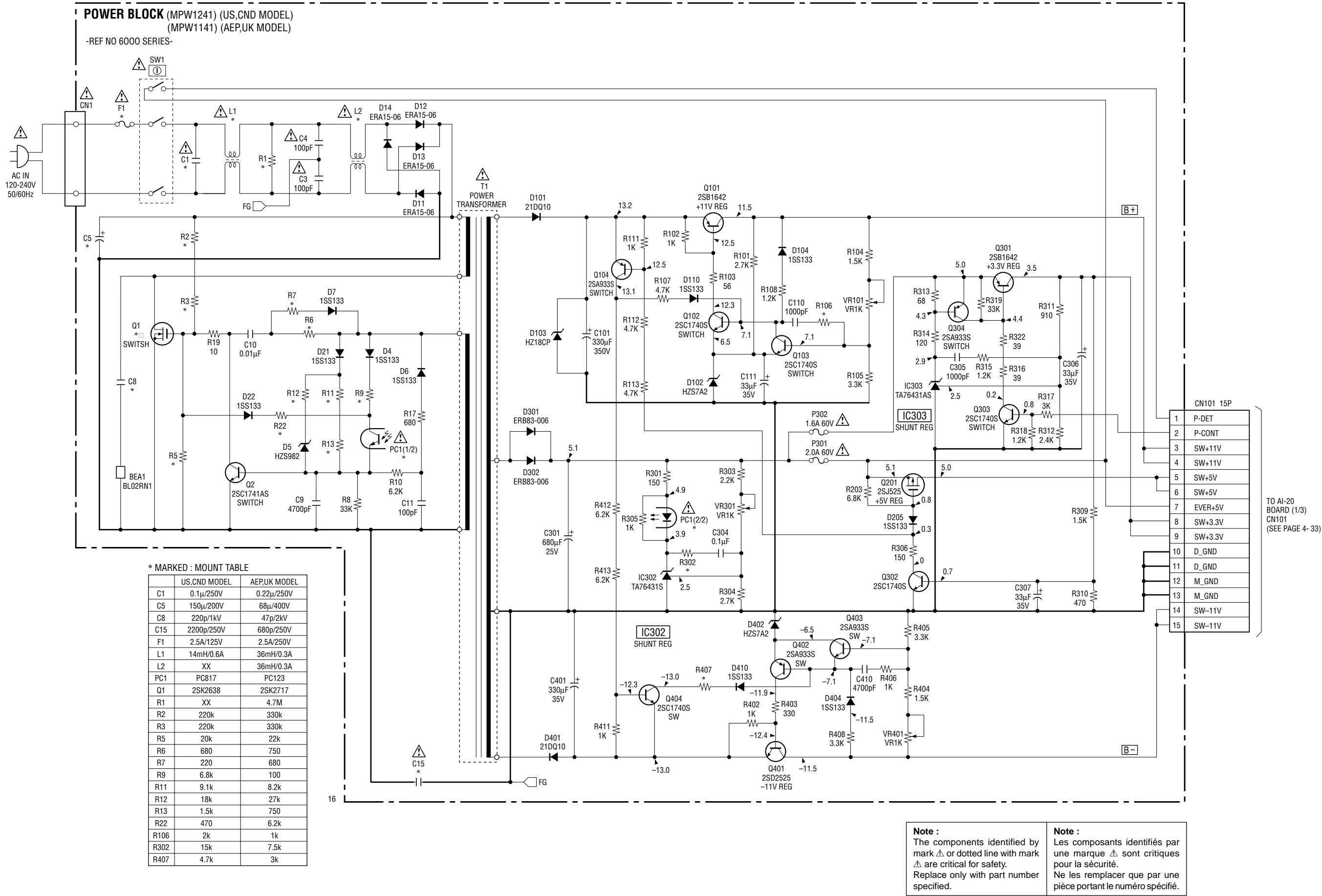
POWER BLOCK (MPW1241) (US,CND MODEL)



16

POWER BLOCK (MPW1141) (AEP,UK MODEL)





*MARKED:MOUNT TABLE(AI-20BOARD(2/3))

REF.NO	CX860(US,CND)	CX860 (AEP,UK)	CX870D
C203		XX	22u 50V
C208		XX	0.22u 16V B
C209		XX	0.001u 50V B
C210		XX	22u 50V
C211		XX	0.22u 16V B
C212			220u 16V
C213	XX	0.47u 16V B	1000u 10V
C214		0.01u 50V B	XX
C215		0.01u 50V B	XX
C218		0.01u 50V B	XX
C219	XX	0.01u 50V B	XX
C220		47u 16V	47u 16V
C221	XX	10u 50V	XX
C222		47u 16V	47u 63V
C223		XX	0.1u 63V
C226		47u 16V	47u 63V
C229		XX	0.1u 63V
C230		0.1u 25V B	XX
C231		XX	220u 63V
C232		1u 50V	4.7u 63V
C235		1u 50V	10u 63V
C236		XX	0.1u 63V
C237			100u 10V
C238			0.01u 50V B
C239			0.01u 50V B
C240		XX	3300p 50V B
C241		XX	3300p 50V B
C244		100u 10V	22u 50V
C245		XX	3300p 50V B
C246		XX	3300p 50V B
C249		XX	47u 63V
C250		XX	0.01u 50V B
C251		XX	0.01u 50V B
C252	XX	0.01u 50V B	
C253		XX	220p 50V
C254		XX	220p 50V
C255		XX	150p 50V CH
C256		XX	150p 50V CH
C257		XX	150p 50V
C258		XX	470p 50V CH
C259		XX	820p 50V
C260		XX	1500p 50V CH
C262	XX	0.47u 16V B	
C263		XX	820p 50V
C264		XX	1500p 50V CH
C265		XX	0.001u 50V
C266		XX	220p 50V
C267		XX	150p 50V CH
C268		XX	470p 50V CH
C270		XX	220p 50V
C271		XX	0.01u 50V B
C272		XX	150p 50V CH
C273		XX	0.01u 50V B
C274		XX	150p 50V
C275	XX	0.01u 50V B	

REF.NO	CX860(US,CND)	CX860 (AEP,UK)	CX870D
C276		XX	0.1u 63V
C277		XX	22u 50V
C278		XX	0.22u 25V B
C279		0.01u 50V B	XX
C280		0.01u 50V B	XX
C283		22u 50V	100u 50V
C285	XX	470p 50V CH	XX
C286	XX	470p 50V CH	XX
D201	XX	DAN202K-T-	
D202	XX	1SS355TE-1	XX
D203		XX	DAN202K-T-
IC202		XX	CXD9543D
IC203		CXD9545Q	XX
IC205	XX	LC78817M-T	XX
IC208		XX	BA15532F-E
IC209		XX	BA4558F-E2
IC210	XX	BA4558F-E2	
Q201		XX	UN2213-TX
Q202	XX	DTC124TKA-	
Q203	XX	2SB709A-QR	
Q208	XX	UN2113-TX	
Q209	XX	DTC124TKA-	
Q210	XX	2SB709A-QR	
R208		XX	0
R221		XX	10
R223		XX	10K
R225		XX	0
R228		XX	10
R230		XX	100
R231		XX	1K
R232		XX	1K
R234		0	XX
R235		XX	10K
R246	XX		
R249	XX	10K	
R255		XX	1200
R256		XX	1200
R257		XX	1200
R258		XX	1200
R259	XX	0	1200
R260	XX	0	1200
R261		XX	0
R262	XX	47K	
R263		XX	3900
R264		XX	3900
R265		XX	3900
R266		XX	3900
R267	XX	3300	1200
R268	XX	3300	1200
R269		XX	1K
R270		XX	1K
R271		XX	3300
R272		XX	3300
R273		XX	3300
R274		XX	3300
R276		XX	3900
R277		XX	12K
R278	XX	0	12K
R279		XX	3900
R280		XX	12K
R281	XX	12K	
R282		XX	1800
R283		XX	1800
R284	XX	0	
R285		XX	1800
R286		XX	1800
R287		XX	1800
R288		XX	1800
R289	XX	0	1800
R290	XX	0	
R291		XX	1800
R292		XX	3900
R293		XX	1800
R294		XX	12K
R295	XX	0	1800
R296	XX	0	12K
R298		XX	3900
R299		XX	12K
R300	XX	12K	
R306		XX	10K
R307		0	XX
R310		0	22
R315	XX	4700	
R316	XX	10K	
R317	XX	47K	
R318	XX	10K	
R319	XX	470	

*MARKED:MOUNT TABLE(CH-98BOARD)

REF.NO	CX860(US,CND)	CX860 (AEP,UK)	CX870D
C402		560p 50V CH	XX
C403		560p 50V CH	XX
C404		10u 50V	XX
C405		XX	47u 63V
C406		XX	150p 50V
C407		XX	150p 50V
C408		XX	0.1u 63V
C409		470u 6.3V	47u 63V
C410		150p 50V CH	XX
C411		150p 50V CH	XX
C412		XX	560p 50V
C414		XX	560p 50V
C415		XX	150p 50V
C416		150p 50V CH	XX
C417		XX	150p 50V
C418		XX	330u 10V
C419		10u 50V	47u 63V
C420		150p 50V CH	XX
C422		XX	1200p 50V
C423		XX	1200p 50V
C425		XX	470p 50V
C426		XX	470p 50V
C428		XX	0.1u 63V
C429		XX	47u 50V
C430		47u 16V	XX
C431		47u 16V	XX
C432		XX	47u 50V
C433		XX	0.1u 63V
C438		XX	47u 16V
C439		XX	0.1u 63V
C440		XX	47u 16V
C441		XX	0.1u 63V
C442		XX	22u 50V
C443		XX	22u 50V
C444		22u 50V	47u 16V
C445		XX	22u 50V
C446		XX	0.1u 63V
C447		XX	0.1u 63V
C448		XX	0.001u 50V
C449		XX	0.001u 50V
C450		XX	220p 50V CH
C451		3300p 50V	2200p 50V
C452		XX	220p 50V
C453		3300p 50V	2200p 50V
C454		XX	3300p 50V B
C455		XX	3300p 50V B
C456		XX	0.001u 50V
C457		XX	0.001u 50V
C458		100p 50V CH	100p 50V CH
C464		100p 50V CH	100p 50V CH
C472	XX	220p 50V CH	XX

REF.NO	CX860(US,CND)	CX860 (AEP,UK)	CX870D
D402		XX	1SS355TE-1 871998861
FB403	○	XX	○
FB404	○	XX	○
FB407		XX	○
FB408	XX	○	○
FB409		XX	○
FB410		XX	○
FB411		XX	○
FB412		XX	○
IC401		BA4558F-E2	BA15532F-E
IC403		XX	OPA2134UA
JS401	XX	○	XX
JS402	XX	○	XX
Q401		XX	2SC2712-YG
Q403		XX	2SA1162-YG
Q405		XX	2SD601A-QR
Q408		XX	2SD1938(F)
Q409	XX	2SD1938(F)	
Q410		XX	2SD1938(F)
Q411		XX	2SD1938(F)
Q412		XX	2SD1938(F)
Q413		XX	2SD1938(F)
Q414		XX	2SD1938(F)
Q415		XX	2SD1938(F)
R408		1K	XX
R410		XX	22K
R411		XX	10K
R412		XX	1K
R422		XX	68
R423		XX	1800
R424		XX	1800
R425		220	XX
R426		XX	1800
R427		XX	1800
R433		XX	1K
R439		XX	47K
R443		XX	3300
R445	4700	XX	
R446	XX	4700	
R447	XX	3300	
R449	XX	100K	
R450		XX	3300
R451		XX	100K
R452		XX	3300
R453		XX	3300
R454	XX	100K	
R455		XX	3300
R456		XX	470
R457	XX	470	
R458		XX	470
R460		XX	470
R461		XX	470
R463	470	XX	470
R465	470	XX	470
R467		XX	470
R469	XX	0	XX
R470		XX	47K
R471		XX	47K
R472		XX	47K
R473		XX	47K
R474	XX	47K	
R475		XX	47K
R489		XX	470
R490		XX	470
RY402		XX	○

SECTION 5

IC PIN FUNCTION DESCRIPTION

5-1. SYSTEM CONTROL PIN FUNCTION MB91108PFV-G-BND (MB-94 BOARD IC102)

Pin No.	Pin name	I/O	Function
39	SC1	O	Serial clock output
40	SI2	I	Serial bus 2 (for data input)
41	SO2	O	Serial bus 2 (for data output)
42	YUVRGB/GAIN/CKSW2	O	Mute signal output to video buffer and EURO C/R select signal output
43	DREQ0	I	Input of DMA-REQ 0 from AV DEC
44	DACK0	O	Output of DMA-ACK 0 to AV DEC
45	IFCS	O	Chip select signal to IF CON
46	DREQ1	I	Input of DMA-REQ 1 from AV DEC
47	DACK1	O	Output of DMA-ACK 1 to AV DEC
48	EWC	O	Write control signal output to EEPROM
49	ECS	O	Chip select signal output to EEPROM
50	KCS/39CS	O	Chip select signal output to audio DSP
51	AURST	O	Reset signal output to audio DAC
52	VSS	–	Ground
53	X1	O	Clock output (12.5 MHz)
54	X0	I	Clock input (12.5 MHz)
55	VCC	–	Power supply
56	CKSW1	I	Chuck sensor input
57	OCSW1	I	Tray sensor input
58	OCSW2	I	Tray sensor input
59	DACCS0	O	Chip select signal output to DAC (2ch)
60	DACCS1	O	Chip select signal output to DAC (6ch) and DSP
61	48/44.1K	O	PLL FS control signal output
62	MAMUTE	O	Audio mute signal output
63	WIDE	O	WIDE select signal output
64	C	–	Capacitor (0.1uF) connect between ground
65	CS0X	O	External ROM chip select signal output
66	CS1X	–	Not used
67	CS2X	O	Chip select signal output (for AV DEC)
68	CS3X	O	Chip select signal output (for AV DEC)
69	CS4X	O	Chip select signal output (for ARP)
70	CS5X	O	Chip select signal output (for FGA)

Pin No.	Pin name	I/O	Function
1~5	HA17-HA21	O	Address bus A17-A21
6	HA22	–	Not used
7	RGBSEL	O	Color difference signal/RGB signal select signal output
8	DACMUTE/FS	O	Filter control signal output
9	AVCC	–	Power supply
10	AVRH	–	Reference power supply (+3.3 V)
11	AVSS	–	Ground
12	AN0	I	Set of mode 0
13	AN1	I	Set of mode 1
14	AN2	I	Set of mode 2
15	AN3	I	Set of mode 3
16	XRST	O	System reset signal output
17	POFF	–	Not used
18	CSb	O	Chip select signal for servo DSP
19	NC	–	Not used
20	EUROV/Y/VFC1	O	EURO V/Y select signal output
21	DISCEXT/VFC2	O	Line input select signal output (DISC: "H", EXT: "L")
22	ARRPST	O	Reset signal output for ARP
23	DRVMUTE	O	Drive mute signal output
24	VCC	–	Power supply
25	INT0	I	Input of interrupt from AV DEC
26	INT1	I	Input of interrupt from ARP
27	INT2	I	Input of interrupt from FGA
28	INT3	I	Input of interrupt from EEPROM
29	INT4	I	Input of interrupt from IF CON
30	INT5	I	Input of interrupt from audio DSP
31	INT6	I	Input of interrupt from audio DSP
32	INT7	I	Input of interrupt from servo DSP
33	SI0	I	Serial data input from IF CON and EEPROM
34	VSS	–	Ground
35	SO0	O	Serial data output to IF CON and EEPROM
36	SC0	O	Serial clock output to IF CON and EEPROM
37	SI1	I	Serial bus 1 (for data input)
38	SO1	O	Serial bus 1 (for data output)

Pin No.	Pin name	I/O	Function
71	CPUCK	O	CPU clock signal output
72	NMIX	–	Not used (fixed at “H”)
73	HSTX	–	Not used (fixed at “H”)
74	FRRSTIN	I	Reset signal input from IF CON
75	VSS	–	Ground
76	MD0	I	Input of mode select 0 (fixed at “1”)
77	MD1	–	Ground
78	MD2	–	Ground
79	XWAIT	I	Wait signal input
80	BGRNTX	–	Test terminal (fixed at “H”)
81	BRQ	–	Test terminal (fixed at “L”)
82	RD	O	Read enable signal output
83	WRH	O	High byte write enable signal output (16 bit and 8 bit)
84	NC	–	Not used
85–92	HD0-HD7	I/O	Data bus D0-D7 (16 bit only)
93–100	HD8-HD15	I/O	Data bus D8-D15 (16 bit) , D0-D7 (8 bit)
101	VSS	–	Ground
102–109	HA0-HA7	O	Address bus A00-A07
110	VCC	–	Power supply
111–118	HA8-HA15	O	Address bus A08-A15
119	VSS	–	Ground
120	HA16	O	Address bus A16

SECTION 6 TEST MODE

6-1. GENERAL DESCRIPTION

The Test Mode allows you to make diagnosis and adjustment easily using the remote commander and monitor TV. The instructions, diagnostic results, etc. are given on the on-screen display (OSD).

6-2. STARTING TEST MODE

At the bottom of menu screen, the model name and revision number are displayed. The “T table” that appears on the screen means the turn table.

To execute each function, select the desired menu and press its number on the remote commander.

To exit from the Test Mode, press the POWER button.

```

Test Mode Menu

0. Syscon Diagnosis
1. Drive Auto Adjustment
2. Drive Manual Operation
3. Mecha Aging
4. Emergency History
5. Version Information
6. Video Level Adjustment
    Exit: Power Key
-
Model      : DPX13xxxx
Revision   : x.xxx

```

6-3. SYSCON DIAGNOSIS

The same contents as board detail check by serial interface can be checked from the remote commander.

On the Test Mode Menu screen, press **[0]** key on the remote commander, and the following check menu will be displayed.

```

### Syscon Diagnosis ###
    Check Menu

0. Quit
1. All
2. Version
3. Peripheral
4. Servo
5. Supply
6. AV Decoder
7. Video
8. Audio
-

```

0. Quit

Quit the Syscon Diagnosis and return to the Test Mode Menu.

1. All

All items continuous check

This menu checks all diagnostic items continuously. Normally, all items are checked successively one after another automatically unless an error is found, but at a certain item that requires judgment through a visual check to the result, the following screen is displayed for the key entry.

```

### Syscon Diagnosis ###

    Diag All Check
    No. 2 Version

2-3. ROM Check Sum
Check Sum = xxxx

Press NEXT Key to Continue
Press PREV Key to Repeat
-

```

For the ROM Check, the check sum calculated by the Syscon is output, and therefore you must compare it with the specified value for confirmation.

Following the message, press **[NEXT]** key to go to the next item, or **[PREV]** key to repeat the same check again. To quit the diagnosis and return to the Check Menu screen, press **[STOP]** or **[ENTER]** key. If an error occurred, the diagnosis is suspended and the error code is displayed as shown below.

```

### Syscon Diagnosis ###

3-2. EEPROM Check
Error 03: EEPROM Write/Read N
Address   : 00000001
Write Data : 2492
Read Data  : 2490
Press NEXT Key to Continue
Press PREV Key to Repeat
-

```

Press **[STOP]** key to quit the diagnosis, or **[PREV]** key to repeat the same item where an error occurred, or **[NEXT]** key to continue the check from the item next to faulty item.

Submenu

Selecting 2 and subsequent items calls the submenu screen of each item.

For example, if “5. Supply” is selected, the following submenu will be displayed.

```

### Syscon Diagnosis ###
    Check Menu
    No. 5 Supply

0. Quit
1. All
2. ARP Register Check
3. ARP to RAM Data Bus
4. ARP to RAM Address Bus
5. ARP RAM Check
-

```

0. Quit

Quit the submenu and return to the main menu.

1. All

All submenu items continuous check

This menu checks 2 and subsequent items successively. At the item where visual check is required for judgment or an error occurred, the checking is suspended and the message is output for key entry. Normally, all items are checked successively one after another automatically unless an error is found.

Selecting 2 and subsequent items executes respective menus and outputs the results.

For the contents of each submenu, see “Check Items List”.

General Description of Checking Method

2. Version

(2-2) Revision

ROM revision number is displayed.

Error: Not detected.

The revision number defined in the source file of ROM (IC106) is displayed with four digits.

(2-3) ROM Check Sum

Check sum is calculated.

Error: Not detected.

The data are added of ROM (IC106) and the result is displayed with 4-digit hexadecimal number. Error is not detected. Compare the result with the specified value.

(2-4) Model Type

Model code is displayed.

Error: Not detected.

The model code is displayed with 2-digit hexadecimal number.

	Model Type	
DVP-CX860 (US, CND)	6	0
DVP-CX860 (AEP, UK)	6	3
DVP-CX870D (US, CND)	7	0

(2-5) Region

Region code is displayed.

Error: Not detected.

The region code determined from the model code is displayed.

3. Peripheral

(3-2) EEPROM Check

Data write → read, and accord check

Error 03: EEPROM write/read discord

Before writing, the data are saved, then after checking, they are written to restore the contents of EEPROM.

(3-3) Gate Array Check

Data write → read, and accord check

Error 02: Gate array write/read discord

4. Servo

(4-2) Servo DSP Check

Data write → read, and accord check

Error 12: Read data discord

(4-3) DSP Driver Test

Test signal data → DSP Driver

Error: Not detected.

5. Supply

Caution: Do not conduct this check with a mechanical deck connected.

An access is made to the stream supply and servo control IC (IC302) and external RAM (IC303) using check data. If mechanical deck is connected, the motor and optics could be damaged. This check is also executed by the “All” menu item.

Supplement: How to disconnect mechanical deck

Disconnect flexible flat cables connected to the CN201 and CN202 of MB-86 board. Also, disconnect flat cable from the CN401.

(5-2) ARP Register Check

Data write → read, and accord check

Error 08: ARP register write, and read data discord

(5-3) ARP to RAM Data Bus

Data write → read, and accord check

Error 09: ARP ↔ RAM data bus error

Data 0x0001 to 0x8000 where one bit each is set to 1 are written to the address 0 of RAM (IC303) connected to the ARP (IC302) through the bus, then they are read and checked. In case of discord, written bit pattern and read data are displayed. If data where multiple bits are 1 are read, the bits concerned may touch each other. Further, if data where certain bit is always 1 or 0 regardless of written data, the line could be disconnected or shorted.

(5-4) ARP to RAM Address Bus

Data write → other address read discord check

Error 10: ARP → RAM address bus error

Caution: Address and data display in case of an error is different from the display of other diagnosis (described later).

Before starting the test, all addresses of RAM (IC303) are cleared to 0x0000.

First, 0xA55A is written to the address 0x000000, and the address data are read and checked from addresses 0x000001 to 0x800000 while shifting 1 bit each. Next, the data at that address is cleared, and it is written to the address 0x000001, and read and checked in the same manner. This check is repeated up to the address 0x800000 while shifting the address data by 1 bit each.

If data other than 0 is read at the addresses except written address, an error is given because all addresses were already cleared to 0. In this check, the error display pattern is different from that of other diagnosis; read data, written address, and read address are displayed in this order. However, the message uses same template, and accordingly exchange Address and Data when reading. The following display, for example,

```
### Syscon Diagnosis ###
```

```
5-4. ARP to RAM Address Bus
Error 10: ARP - RAM Address B
Address   : 0000A55A
Write Data: 00000000
Read Data : 00080000
Press NEXT Key to Continue
Press PREV Key to Repeat
—
```

shows the data 0xA55A was read from address 0x00080000 though it was written to the address 0x00000000. This implies that these addresses are in the form of shadow. Also, if the read data is not 0xA55A, another error will be present.

(5-5) ARP RAM Check

Data write → read, and accord check

Error 11: ARP RAM read data discord

The program code data stored in ROM are copied to all areas of RAM (IC303) connected to the ARP (IC302) through the bus, then they are read and checked if they accord. If the detail check was selected initially, the data are written to all areas and read, then the same test is conducted once again with the data where all bits are inverted between 1 and 0. If discord is detected, faulty address, written data, and read data are displayed following the error code 11, and the test is suspended.

6. AV Decoder

(6-2) 1930 RAM

Data write → read, and accord check

Error 13: AVD RAM read data discord

The program code data stored in ROM (IC106) are copied to all areas of RAM (IC504, IC505) connected to the AVD (IC502) through the bus, then they are read and checked if they accord. Further, the same test is conducted once again with the data where all bits are inverted between 1 and 0. If discord is detected, faulty address, written data, and read data are displayed following the error code 13, and the test is suspended.

(6-3) 1930 SP

ROM → AVD RAM → Video OUT

Error: Not detected.

The data including sub picture streams in ROM (IC106) are transferred to the RAM (IC504, IC505) in AVD (IC502), and output as video signals from the AVD (IC502).

They are output from all video terminals (Composite, Y/C, Component).

7. Video

(7-2) Color Bar

AVD color bar command write → Video OUT

Error: Not detected.

The command is transferred to the AVD, and the color bar signals are output from video terminals.

They are output from all video terminals (Composite, Y/C, Component).

8. Audio

(8-2) ARP → 1930

Error 14 : ARP → 1930 video NG

15 : ARP → 1930 audio NG

(8-3) Test Tone

A pink noise signal is output from the AVD (IC502) through optical coaxial digital terminal and analog audio terminal.

Error: Not detected.

All channels → 2ch Left → 2ch Right are checked in this order.

Check Items List

- 2) Version
 - (2-2) Revision
 - (2-3) ROM Check Sum
 - (2-4) Model Type
 - (2-5) Region
- 3) Peripheral
 - (3-2) EEPROM Check
 - (3-3) Gate Array Check
- 4) Servo
 - (4-2) Servo DSP Check
 - (4-3) DSP Driver Test
- 5) Supply
 - (5-2) ARP Register Check
 - (5-3) ARP to RAM Data Bus
 - (5-4) ARP to RAM Address Bus
 - (5-5) ARP RAM Check
- 6) AV Decoder
 - (6-2) 1930 RAM
 - (6-3) 1930 SP
- 7) Video
 - (7-2) Color Bar
- 8) Audio
 - (8-2) ARP → 1930
 - (8-3) Test Tone

Error Codes List

- 00: Error not detected
- 01: RAM write/read data discord
- 02: Gate array NG
- 03: EEPROM NG
- 08: ARP register read data discord
- 09: ARP ↔ RAM data bus error
- 10: ARP ↔ RAM address bus error
- 11: ARP RAM read data discord
- 12: Servo DSP NG
- 13: 1930 SDRAM NG
- 14: ARP → 1930 video NG
- 15: ARP → 1930 audio NG
- 16: 1939 UCODE download NG
- 17: System call error (function not supported)
- 18: System call error (parameter error)
- 19: System call error (illegal ID number)
- 20: System call error (time out)
- 90: Error occurred
- 91: User verification NG
- 92: Diagnosis cancelled

6-4. DRIVE AUTO ADJUSTMENT

On the Test Mode Menu screen, press **[1]** key on the remote commander, and the drive auto adjustment menu will be displayed.

```
## Drive Auto Adjustment ##

      Adjustment Menu

0. ALL
1. DVD-SL
2. CD
3. DVD-DL
4. SACD

Exit: RETURN
```

Normally, **[0]** is selected to adjust DVD (single layer), CD, DVD (dual layer), and SACD in this order. But, individual items can be adjusted for the case where adjustment is suspended due to an error. In this mode, the adjustment can be made easily through the operation following the message displayed on the screen.

The disc used for adjustment must be the one specified for adjustment. However, for SACD disc, use the player with initial data if the disc is not available.

0. ALL

When **[0.ALL]** is selected, set the three discs at the same time. With the signal read out side of disc facing to the left, set the discs into 1. DVD-DL, 2. CD, 3. DVD-DL starting from number 1 of the T.table in this order. Press **[ENTER]**. Then, 1. DVD-SL disc, 2. CD disc and 3. DVD-DL disc are adjusted in this order. Discs need not be replaced. If an error is detected, re-start the adjustment from the very beginning. When you want to adjust these discs one disc after another, set the T table number to 1. Each time one disc was adjusted, it is ejected. Replace it with the specified disc following the message. Though the message to confirm whether discs other than SACD disc are adjusted is not displayed, you can finish the adjustment if pressing the **[STOP]** button. The S curve level, RF level, and jitter value can be confirmed during adjustment, and if OK, press the **[ENTER]** key and continue adjustment. (If NG, press the **[STOP]** button) During adjustment of each disc, the measurement for disc type judgment is made. As automatic adjustment does not judge the disc type unlike conventional models, take care not to insert wrong type discs. Also, do not give a shock during adjustment.

1. DVD-SL (single layer)

Select **[1]**, insert DVD single layer disc, and press **[ENTER]** key, and the adjustment will be made through the following steps, then adjusted values will be written to the EEPROM.

DVD Single Layer Disc Adjustment Steps

1. SLED TILT Reset
2. Disc Check Memory SL
3. Wait 500 msec
4. Set Disc Type SL
5. LD ON
6. Spdl Start
7. Wait 1 sec
8. Focus Search ON
9. Focus Search OFF
10. Focus Servo ON 1
11. Auto Track Offset Adjust
12. Tracking ON
13. CLVA ON
14. Wait 1 sec
15. Sled ON
16. Check CLV Lock
17. Auto LFO Adjust
18. Auto Focus Offset Adjust
19. Auto Tilt Position Adjust
20. Auto Focus Gain Adjust
21. Auto Focus Offset Adjust
22. EQ Boost Adjust
23. Auto LFO Adjust
24. Auto Track Gain Adjust
25. All Servo Stop
26. Eep Copy Loop Filter Offset

2. CD

Select [2], insert CD disc, and press [ENTER] key, and the adjustment will be made through the following steps, then adjusted values will be written to the EEPROM.

CD Adjustment Steps

1. Sled Tilt Rest
2. Disc Check Memory CD
3. Wait 500 msec
4. Set Disc Type CD
5. LD ON
6. Spdl Start
7. Wait 1 sec
8. Focus Search ON
9. Focus Search OFF
10. Focus Servo ON 1
11. Auto Track Offset Adjust
12. Tracking ON
13. (TC Display Start)
14. CLVA ON
15. Wait 1 sec
16. Jitter Display Start
17. Sled ON
18. Check CLV ON
19. Auto LFO Adjust
20. Auto Focus Offset Adjust
21. Auto Focus Gain Adjust
22. Auto Focus Offset Adjust
23. Eq Boost Adjust
24. Auto LFO Adjust
25. Auto Track Gain Adjust
26. All Servo Stop

3. DVD-DL (dual layer)

Select [3], insert DVD dual layer disc, and press [ENTER] key, and the adjustment will be made through the following steps, then adjusted values will be written to the EEPROM.

DVD Dual Layer Disc Adjustment Steps

1. Sled Tilt Reset
2. Disc Check Memory DL
3. Wait 500 msec
4. Set Disc Type DL
5. LD ON
6. Spdl Start
7. Wait 1 sec
Layer 1 Adjust
8. Focus Servo ON 1
9. Auto Track Offset Adjust
10. Tracking ON
11. Clva ON
12. Wait 1 sec
13. Sled ON
14. Check CLV Lock
15. Auto Loop Filter Offset Adjust
16. Auto Focus Offset Adjust
17. Auto Focus Gain Adjust
18. Auto Focus Offset Adjust
19. Eq Boost Adjust
20. Auto Loop Filter Offset
21. Auto Track Gain Adjust
Layer 0 Adjust
22. Fj (L1 → L0)
23. Auto Track Offset Adjust L0
24. Tracking ON
25. Clva ON
26. Wait 1 sec
27. Sled ON
28. Check CLV Lock
29. Auto Loop Filter Offset Adjust
30. Auto Focus Offset Adjust
31. Auto Focus Gain Adjust
32. Auto Focus Offset Adjust
33. Eq Boost Adjust
34. Auto Loop Filter Offset
35. Auto Track Gain Adjust
36. All Servo Stop

4. SACD

Select [4], insert SACD disc, and press [ENTER] key, and the adjustment will be made through the following steps, then adjusted values will be written to the EEPROM. However, if SACD disc is not available, use the player with initial data, skipping the SACD adjustment. In this case, you can finish the adjustment if pressing the [STOP] button.

SACD Adjustment Steps

1. Sled Tilt Reset
2. Set Disc Type CD
3. LD ON
4. Spdl Start
5. Wait 1 sec
6. Focus Servo ON 0
7. Auto track Offset Adjust
8. Tracking ON
9. CLVA ON
10. Wait 1 sec
11. Sled ON
12. Check CLV ON
13. Auto LFO Adjust
14. Auto Focus Offset Adjust
15. Auto Focus Gain Adjust
16. Auto Focus Offset Adjust
17. Eq Boost Adjust
18. Auto LFO Adjust
19. Auto Track Gain Adjust
20. All Servo Stop

6-5. DRIVE MANUAL OPERATION

On the Test Mode Menu screen, select [2], and the manual operation menu will be displayed. When the menu item [2] is selected, the machine starts the mechanical initialization automatically. For the manual operation, each servo on/off control and adjustment can be executed manually. The unique adjustment of the model 300 CHG is the adjustment item “7 & 8. 300 CHG MechaCon Menu 1 and 2”.

```
## Drive Manual Operation ##

          Operation Menu
1. Disc type
2. Servo Control
3. Track/Layer Jump
4. Manual Adjustment
5. Auto Adjustment
6. Memory Check
7. 300CHG MechaCon Menu 1
8. 300CHG MechaCon Menu 2
0. Disc Check Memory
                        Exit: Return
```

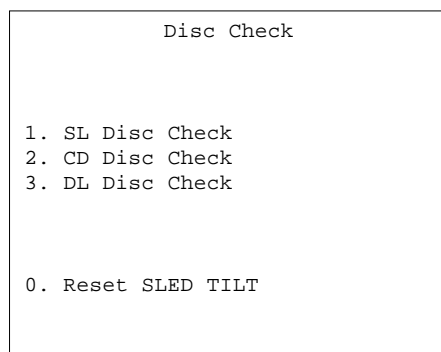
In using the manual operation menu, take care of the following points. These commands do not provide protection, thus requiring correct operation. The sector address or time code field is displayed when a disc is loaded.

1. Set correctly the disc type to be used on the Disc Type screen.
The disc type must be set after a disc was loaded.
The set disc type is cleared when the tray is opened.
2. After power ON, if the Drive Manual Operation was selected, first perform “Reset SLED TILT” by opening 1. Disc Type screen.
3. In case of an alarm, immediately press the [STOP] button to stop the servo operation, and turn the power OFF.

Basic operation (controllable from front panel or remote commander)

[POWER]	Power OFF
[STOP]	Servo stop
[OPEN/CLOSE]	Stop+Eject/Loading
[RETURN]	Return to Operation Menu or Test Mode Menu
[NEXT], [PREV]	Transition between sub modes of menu
[1] to [9], [0]	Selection of menu items
Cursor UP/DOWN	Increase/Decrease in manually adjusted value

0. Disc Check Memory



On this screen, the mirror time is measured to judge the disc and it is written to the EEPROM. First load DVD SL disc and press [1], next load CD disc and press [2], and finally load DVD DL disc and press [3].

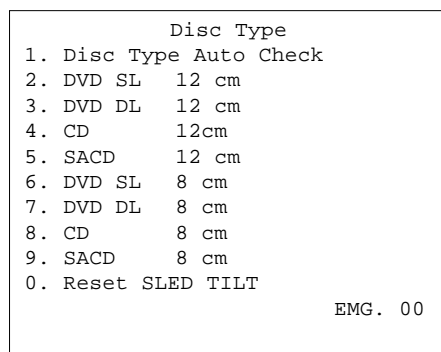
The adjustment must be executed more than once after default data were written. External vibration or shock to the player must not be given. Reference value for DVD is from 10 to 20, and for CD, from 28 to 4F.

Check that the value of CD is larger than that of DVD.

When those values are beyond a range perform this adjustment again.

From this screen, you can go to another mode by pressing [NEXT] or [PREV] key, but you cannot enter this mode from another mode. You can enter this mode from the Operation Menu screen only.

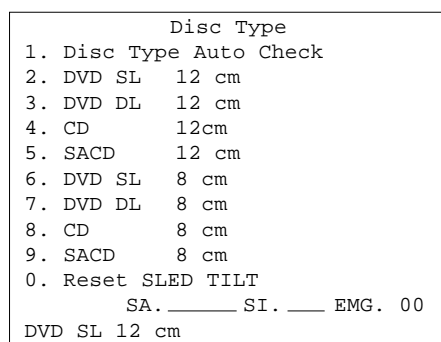
1. Disc Type



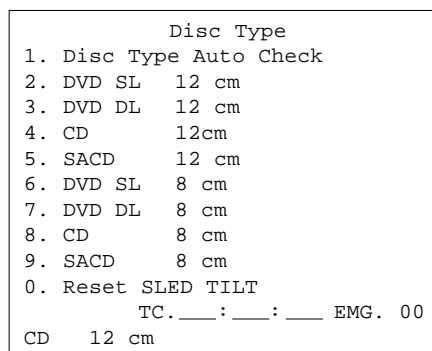
On this screen, select the disc type. To select the disc type, press the number of the loaded disc. The selected disc type is displayed at the bottom. Selecting [1] automatically selects and displays the disc type. In case of wrong display, retry "Disc Check Memory". Also, opening the tray causes the set disc type to be cleared. In this case, set the disc type again after loading.

In performing manual operation, the disc type must be set.

Once the disc type has been selected, the sector address or time code display field will appear as shown below. These values are displayed when PLL is locked.



Display when DVD SL 12cm disc was selected



Display when CD 12cm disc was selected

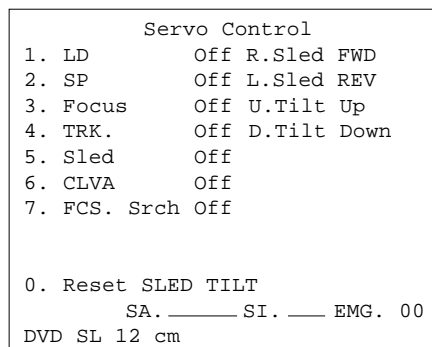
[0] Reset SLED TILT Reset the Sled and Tilt to initial position.

[1] Disk Type Check Judge automatically the loaded disc. As the judged result is displayed at the bottom of screen, make sure that it is correct.

If Disc Check Memory menu has not been executed after EEPROM default setting, the disc type cannot be judged. In this case, return to the initial menu and make a check for three types of discs (SL, DL, CD).

[2] to [9] Select the loaded disc. The adjusted value is written to the address of selected disc. No further entry is necessary if [1] was selected.

2. Servo Control



On this screen, the servo on/off control necessary for replay is executed. Normally, turn on each servo from 1 sequentially and when CLVA is turned on, the usual trace mode becomes active. In the trace mode, DVD sector address or CD time code is displayed. This is not displayed where the spindle is not locked.

The spindle could run overriding the control if the spindle system is faulty or RF is not present. In such a case, do not operate CLVA.

[0] Reset SLED TILT	Reset the Sled and Tilt to initial position.
[1] LD	Turn ON/OFF the laser.
[2] SP	Turn ON/OFF the spindle.
[3] Focus	Search the focus and turn on the focus.
[4] TRK	Turn ON/OFF the tracking servo.
[5] Sled	Turn ON/OFF the sled servo.
[6] CLVA	Turn ON/OFF normal servo of spindle servo.
[7] FCS. Srch	Apply same voltage as that of focus search to the focus drive to check the focus drive system.
→ Sled FWD	Move the sled outward. Perform this operation with the tracking servo turned off.
← Sled REV	Move the sled inward. Perform this operation with the tracking servo turned off.
↑ Tilt UP	Move the tilt upward.
↓ Tilt DOWN	Move the tilt downward.

The following menus are normally not used.

3. Track/Layer Jump

4. Manual Adjustment

5. Auto Adjustment

The persons who do not know well about these menus should not use them.

6. Memory Check

EEPROM DATA	--	DL	--
	CD	SACD	SL L0 L1
Focus Gain	xx	xx	xx xx xx
TRK. Gain	xx	xx	xx xx xx
Focus Offset	xx	xx	xx xx xx
TRK. Offset	xx	xx	xx xx xx
L. F. Offset	xx	xx	xx xx xx
Analog FRSW	xx	xx	xx xx xx
PLL DAC Gain	xx	xx	xx xx xx
EQ Boost	xx	xx	xx xx xx
Jitter	xx	xx	xx xx xx
Mirror Time	xx		xx xx
—	CLEAR: Default Set		

This screen displays current servo adjusted data stored in the EEPROM. Though adjusted data can be initialized with the **[CLEAR]** key, they cannot be restored after initialization.

So, before clearing, make a note of the adjusted data.

For reference, the drive has been designed so that the gain center value is 20 and offset value is 80. Other values will be in a range of 10 to 80. If extreme value such as 00 or FF is set, adjustment will be faulty. In such a case, check for disc scratch or cable disconnection, then perform adjustment again.

7. 300 CHG MechaCon Menu 1

On this test mode screen, selecting **[7]** enables the adjustment from the front control panel such as disc loading. The following screen appears.

When **[7]** is selected in the Drive Manual Operation

## 300CHG MechaCon Menu 1 ##	
ENTER	: Mecha Initial
PLAY	: Disc Load(FRONT)
STOP	: Disc UnLoad(FRONT)
OR/CL	: Door OPEN/CLOSE
UP	: UnChuck (FRONT)
DOWN	: Chuck (FRONT)
RIGHT	: Loading (FRONT)
LEFT	: UnLoading (FRONT)
Jog FOR	: Table R Step Turn
Jog PRV	: Table L Step Turn
RETURN:EXIT	

[ENTER] Mecha Initial : Performs initialization of mechanism.
Because the mechanical initialization is performed when the machine enters the Drive Manual Operation mode, use this item when an error such as adjustment error occurs.

[PLAY] Disc Load : Loads the disc from the chucking position of the T. table toward inside the MD.
When the Disc Load is selected, a series of operation starting from Un-chucking – Loading – Chucking is performed.

[STOP] Disc Unload : Moves the disc from inside the MD to the T. table.
When the Disc Unload is selected, a series of operation starting from Un-chucking – Unloading – Chucking is performed.

[OP/CL] Door OPEN/CLOSE : Opens and closes the door.

[UP] Un-chuck : Un-chucks the MD block.

[DOWN] Chuck : Chucks the MD block.

[RIGHT] Loading : Moves the disc from the un-chucked state to the T. table then to the MD block.

[LEFT] Unloading : Moves the disc from the un-chucked state to the MD block then to the T. table.

[Jog FOR] Table R step Turn: Moves the T. table to the right in units of slit. The T. table number is incremented in the direction of positive (+) number.

[Jog PRV] Table L step Turn: Moves the T. table to the left in units of slit. The T. table number is decremented in the direction of negative (-) number.

8. 300 CHG MechaCon Menu 2

On this test mode screen, selecting **[8]** enables the adjustment from the rear panel such as disc loading. The following screen appears.

When **[8]** is selected in the Drive Manual Operation

```
## 300CHG MechaCon Menu 2 ##
ENTER      : Mecha Initial
PLAY       : Disc Load(REAR)
STOP       : Disc UnLoad(REAR)
OR/CL      : Door OPEN/CLOSE
UP         : UnChuck(REAR)
DOWN       : Chuck(REAR)
RIGHT      : Loading(REAR)
LEFT       : UnLoading(REAR)
DISP       : Mecha Adjust
PAUSE      : TT offset Debug

RETURN:EXIT
```

Insertion and rejection of discs are performed from the rear panel. All operations are the same as those of the 300CHG MechaCon Menu-1 except **[DISP]** and **[PAUSE]**.

[DISP] Mecha Adjust : When this item is selected, the machine enters the adjustment mode of the disc existence/non-existence sensor. The following screen appears.

[PAUSE] TT offset Debug: When this item is selected, load to the T. table is measured by changing the value of the PWM control to the motor. Never attempt to enter this mode. When this mode is selected, the machine needs to perform the Mecha Initial.

When Mecha Adjust is selected in the 300CHG Mecha Con Menu-2

```
## Mecha Adjust Mode ##
RIGHT      : Disc Sensor Adjust
LEFT       : TurnTable Adjust

TurnTable Data : XX
SensorSensiv  : XX
Sensor Posi RP : XX
Sensor Posi RM : XX
Sensor Posi LP : XX
Sensor Posi LM : XX

RETURN:EXIT
```

Turn Table Data : Indicates the center position of the slit. (Width of one slit = 24 pulses). The default value is 12.

Sensor Sensiv : Indicates sensitivity of the disc sensor. The normal value is ranging from 1 to 5.

Sensor Posi RP : These are not the important values.

Sensor Posi RM : — They indicates the position of the disc sensor when the disc sensor monitors the disc
Sensor Posi LP : — when rotating the T. table. Rx indicates
Sensor Posi LM : — the value when the T. table is rotated clockwise and Lx indicates the value when the T. table is rotated counter-clockwise.

[RIGHT] : Enters the sensitivity adjustment mode of the disc sensor.

[LEFT] : Adjusts finely the center position of the slit in units of pulse using the Jog dial.

When Disc Sensor Adjust is selected in the 300CHG Mecha Con Menu-2

```
## Sensor Adjust Mode ##
DOWN       : Sensitivity Adjust
RIGHT      : Position Adjust R
LEFT       : Position Adjust L

RETURN:EXIT
```

[DOWN] : Performs the sensitivity adjustment of the disc sensor by turning the T. table for a full rotation.

[RIGHT] : Determines the detection position of the T. table by counting the number of slit's tooth of the T. table when the T. table is turned clockwise by a full rotation.

[LEFT] : Determines the detection position of the T. table by counting the number of slit's tooth of the T. table when the T. table is turned counter-clockwise by a full rotation.

When Turn Table Adjust Mode is selected in the Mecha Adjust Mode

```
## Turn Table Adjust Mode ##
JOGFWD     : Right 1Step
JOGPRV     : Left 1Step
DMSFWD     : Right 2Step
DMSPRV     : Left 2Step
ENTER      : ENTER -> Exit

STEP       : 12

RETURN:Exit
```

Performs the fine adjustment of the slit position of the T. table using the Jog dial and the DMS (disc selection dial).

[JOGFWD] : Moves the T. table to the right by one pulse. STEP+

[JOGPRV] : Moves the T. table to the left by one pulse. STEP-

[DMSFWD] : Moves the T. table to the right by tow pulses. STEP++

[DMSPRV] : Moves the T. table to the left by two pulses. STEP--

[ENTER] : Determines the adjustment value ad the set value.

STEP : When the T. table is adjusted using the above commands, the adjustment position during each adjustment item is displayed. The initial value is set to 12.

When **PAUSE** is selected in the 300CHG Mecha Con Menu-2

##	Turn	Table	Offset	Debug	##
NO		On		Off	
1		X		XX	
2		X		XX	
3		X		XX	
4		X		XX	
5		X		XX	
PLAY : Slow Turn (No.5)					
STOP : Turn Stop					
PAUSE : Change PWM					
RETURN:Exit					

PLAY : Moves the T. table slowly,

STOP :Stops movement of the T. table.

PAUSE: Sets the PWM value in the order starting from NO → On → Off.

This mode is prepared for measurement of the load to the T. table as described before. Result of the measurement is not reflected on adjustment. After this mode is selected, Mecha Initial must be performed.

6-6. MECHA AGING

When **3** is selected on this test mode screen, the machine enters the mechanical aging mode. The following screen appears. Do not use this mode.

### Mecha Aging ###	
1.Please Select Aging mode	
2.All Mecha : random Aging mode	
3.All Mecha : + 1 Move	
4.All Mecha : - 1 Move	
5.All Mecha : 1 Disc Front	
6.All Mecha : 1 Disc Rear	
7.TurnTable : Random Move	
8.TurnTable : Half Move	
9.Door Open/Close	
Exit:Return	

6-7. EMERGENCY HISTORY

### MEG. History ###	
Laser Hours	CD xxxxxxxxh
	DVD xxxxxxxxh
1. 00 00 00 00 00 00 00 00	
00 00 00 00 00 00 00 00	
2. 00 00 00 00 00 00 00 00	
00 00 00 00 00 00 00 00	
Select: 1 - 9 Scroll: UP/DOWN	
(1: Last EMG.) Exit: Return	

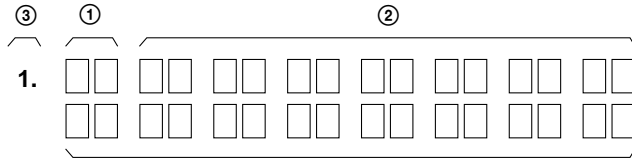
On the Test Mode Menu screen, selecting **4** displays the information such as servo emergency history. The history information from last 1 up to 10 can be scrolled with **↑** key or **↓** key. Also, specific information can be displayed by directly entering that number with ten keys.

The upper two lines display the laser ON total hours. Data below minutes are omitted.

Clearing History Information

- Clearing laser hours
 - ◎ Press **DISPLAY** and **CLEAR** keys in this order.Both CD and DVD data are cleared.
 - Clearing emergency history
 - ◎ Press **TITLE** and **CLEAR** keys in this order.Initializing set up data
 - ◎ Press **DVD** and **CLEAR** keys in this order.
- The data have been initialized when “Set Up Initialized” message is displayed. The EMG. History screen will be restored soon.

How to see Emergency History



①: Emergency Code

②: Don't Care

These codes are used for verification of software designing.

③: Historical order 1 to 9

Emergency Codes List

- 10: Communication to IC201 (MB-86 board) failed.
- 11: Each servo for focus, tracking, and spindle is unlocked.
- 12: Communication to EEPROM, IC101 (MB-86 board) failed.
- 13: Writing of hours meter data to EEPROM, IC101 (MB-86 board) failed.
- 14: Communication to Servo DSP IC404 (MB-86 board) failed, or Servo DSP is faulty.
- 20: Initialization of tilt servo and sled servo failed. They are not placed in the initial position.
- 21: Tilt servo operation error
- 22: Syscon made a request to move the tilt servo to wrong position.
- 23: Sled servo operation error
- 24: Syscon made a request to move the sled servo to wrong position.
- 30: Tracking balance adjustment error
- 31: Tracking gain adjustment error
- 32: Focus balance adjustment error
- 33: Focus bias adjustment error
- 34: Focus gain adjustment error
- 35: Tilt servo adjustment error
- 36: RF equalizer adjustment error
- 37: RF group delay adjustment error
- 38: Jitter value after adaptive servo operation is too large.
- 40: Focus servo does not operate.
- 41: With a dual layer (DL) disc, focus jump failed.
- 50: CLV (spindle) servo does not operate.
- 51: Spindle does not stop.
- 60: With a DVD disc, Syscon made a request to seek nonexistent address.
- 61: With a CD disc, Syscon made a request to seek nonexistent address.
- 62: With a CD disc, Syscon made a request to seek nonexistent track No. and index No.
- 63: With a DVD disc, seeking of target address failed.
- 64: With a CD disc, seeking of target address failed.
- 65: With a CD disc, seeking of target index failed.
- 70: With a DVD disc, physical information data could not be read.
- 71: With a CD disc, TOC data could not be read.
- 80: Disc type judgment failed.
- 81: As disc type judgment failed, retry was repeated.
- 82: As disc type judgment failed, a measurement error occurred.
- 83: Disc type could not be judged within the specified time.
- 84: Illegal command code was received from Syscon.
- 85: Illegal command was received from Syscon.

6-8. VERSION INFORMATION

## Version Information ##			
IF con.	Ver. x.	xxx (xxxx)	
	Group	00	
SYScon.	Ver. x.	xxx (xxxx)	
	Model	xx	
	Region	0x	
Servo DSP.	Ver. 1.	xxxx	
Exit: RETURN			

On the Test Mode Menu screen, selecting [5] displays the ROM version and region code.

The parenthesized hexadecimal number in version field is checksum value of ROM.

6-9. VIDEO LEVEL ADJUSTMENT

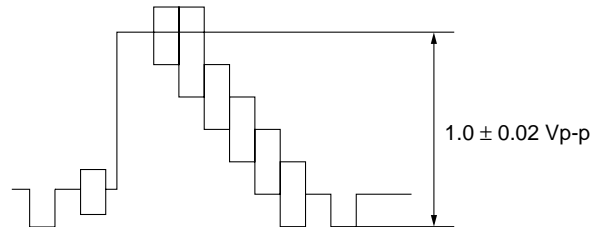
On the Test Mode Menu screen, selecting [6] displays color bars for video level adjustment. During display of color bars, OSD disappears but the menu screen will be restored if pressing any key.

Measurement point : LINE OUT VIDEO
(75 Ω terminating resistance)

Measuring instrument : Oscilloscope

Adjustment device : RV501 on MB-86 board

Specified value : 1.0 ± 0.02 Vp-p



6-10. IF CON SELF DIAGNOSTIC FUNCTION

1. FR-173 BOARD (IF CON) TEST MODE

The FR-173 board (IF CON) test mode is the IF CON self diagnostic mode. The IF CON can diagnose the functions of the front panel boards that the IF CON controls. Normally, the IF CON makes a serial communication with the SYSTEM CONTROL and operates following the commands from the SYSTEM CONTROL, but in the Test mode, the IF CON operates independently from the SYSTEM CONTROL.

In the Test mode, the following functions can be checked.

1. Button function
2. Remocon receiving function
3. SYSTEM CONTROL-IF CON serial communication
4. Click shuttle function
5. Fluorescent display tube lighting check
Grid check
Anode check
6. LED control function

In the Test mode, the set operates same as usual, except voltage monitoring, communication monitoring, display of fluorescent display tube, and LED control.

1. The routine that monitors +3.3 V (PON CHK) of MB-94 board is not provided.
2. The monitoring timer for serial communication with the SYSTEM CONTROL is not provided. The set is not placed in the Standby mode, even if the communication with SYSTEM CONTROL is normal.
3. Display of fluorescent display tube (normally, display is made following the commands from SYSTEM CONTROL)
4. LED control (normally, control is made following the commands from SYSTEM CONTROL)

2. OPERATION OF SELF CHECK MODE

The Self Check mode is the function to conduct the basic test to the FL display and DVD panel section.

2-1. Self Check Mode Transition Processing

While pressing the **[STOP]** key on the main unit with the IF CON in STANDBY mode, enter **[RETURN]** → **[DISPLAY]** (or **[SET UP]**) on the remote commander, and the unit transits to the Self Check Mode. The Self Check mode terminates when the IF CON transits to the STANDBY mode.

2-2. Operation of Auto Self Check

When the Self Check mode becomes active at the AC Power ON or by key input, the test display of the following steps (1) to (4) is repeated.

(1) FLD and LED all ON (for 5 seconds)

VIDEO CD	▶	Digital DTS	PBC ANGLE				NEXT	DISC
DVD		MPEG NTSC	REPEAT 1A-B					
CD		TEXT DISC	PGM SHUFFLE					
		ALL DISCS	DVD CD A B C D					
TRACK TITLE		INDEX CHAPTER						
			HOUR			MIN		SEC

(2) MODEL display (for 2 seconds)

[illegible]

Contents of display

“DPX-1370” Basic

“DPX-1375” DD

(3) Version display (for 2 seconds)

VIDEO CD DVD CD PBC ANGLE

MPEG NTSC REPEAT 1 A-B

TEXT DISC PGM SHUFFLE











ALL DISCS DVD CD A B C D

TRACK TITLE INDEX CHAPTER

NEXT DISC

HOUR MIN SEC

(4) ROM creation date display (for 2 seconds)

VIDEO CD	▶	Digital DTS	PBC ANGLE		NEXT	DISC
DVD		MPEG NTSC	REPEAT 1A-B			
CD		TEXT DISC	PGM SHUFFLE			
		ALL DISCS	<u>DVD CD A B C D</u>			
TRACK	INDEX					
TITLE	CHAPTER					
		HOUR			MIN	
						

2-3. Each Self Check Function

Each Self Check function tests the FLD display, LED display, and key input.

DPX1370 (300-Disc) IC106

No.	Input Voltage (V)	A/D	Resistor	Pin ① (AN5)	HEX	Pin ② (AN4)	HEX	Pin ③ (AN3)	HEX	Pin ④ (AN2)	HEX
0	0 – 0.1	0 – 20	10K(PULL)	STOP	01	EJECT	94	LOAD	8C	SURROUND	7D
1	0.55 – 0.76	113 – 156	1500	PAUSE	02	OPEN/CLOSE	09	REPEAT	0F	DVE/DIMMER	5F
2	1.14 – 1.42	233 – 291	1800	LEFT	07	PLAY	0A	TIME/TEXT	21	FOLDER A	85
3	1.76 – 2.1	360 – 430	2700	DOWN	06	MEGA CONT	23	SHUFFLE	56	FOLDER B	86
4	2.28 – 2.64	467 – 541	3300	ENTER	05	EASY PLAY	91	1/ALL DISCS	8E	FOLDER C	88
5	2.79 – 3.13	571 – 641	4700	UP	04	FLIP	95	TITLE	0E	FOLDER D	89
6	3.34 – 3.62	684 – 741	8200	RIGHT	03	DISC CHANGE	93	DISPLAY	57	FOLDER ALL	90
7	3.85 – 4.06	788 – 831	15K	JOG	08	DIRECT SEARCH	92	DVD MENU	0D	FOLDER DVD	84
8	4.43 – 4.64	907 – 950	56K	ACS-ENTER	2C			RETURN	0F	FOLDER CD	87

2-3-1. FLD and LED All ON

2-3-1-1. Transition Keys in Self Check Mode

- **STOP** key and **PLAY** key on the main unit
- **LEFT** key on the main unit and the remote commander

2-3-1-2. Operation and Display

In this mode, all LEDs except STANDBY LED and all segments of FLD turn ON.


Example of FLD all ON

VIDEO CD	DVD	CD	▶	Digital DTS	MPEG NTSC	TEXT DISC	ALL DISCS	PBC ANGLE	REPEAT 1 A-B	PGM SHUFFLE	DVD CD A B C D	NEXT	DISC
TRACK	TITLE	INDEX	CHAPTER	HOUR			MIN						SEC
0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000

2-3-2. Main Unit Key Name Display and Key Code Display

2-3-2-1. Transition Keys in Self Check Mode

- Keys on main unit except keys transited in self check

- When the ACS key is used: (Display: ACS TEST )
The ACS key can be tested by rotating the knob.

2-3-2-2. Operation and Display

When a key on the main unit is pressed in the Self Check mode, the name of that key is displayed on the FLD. Also, the key name display and the key code display can be switched with the **DIS-PLAY** key on the remote commander. “NOTHING” is displayed when nothing is entered. Also, VIDEO CD, DVD, and CD segments turn on when a communication error occurred.

FLD display (at input of **PLAY** key on the main unit)

VIDEO CD	DVD	CD	▶	Digital DTS	MPEG NTSC	TEXT DISC	ALL DISCS	PBC ANGLE	REPEAT 1 A-B	PGM SHUFFLE	DVD CD A B C D	NEXT	DISC
TRACK	TITLE	INDEX	CHAPTER	HOUR			MIN						SEC
0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000

- When the ENTER key is used: (Display: KEYBOARD TEST)
The keyboard input can be tested by connecting the keyboard.

Key code display (at input of **PLAY** key, Key code: 0Ah)

<div>VIDEO CD</div>	<div>▶</div> <div>⏸</div>	<div>Digital DTS</div>	PBC ANGLE		<div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> <div>⬆</div> 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At input of faulty voltage

				MPEG NTSC	TEXT DISC	PBC ANGLE	REPEAT 1A-B	PGM SHUFFLE	DVD CD A B C D	NEXT	DISC
TRACK TITLE	INDEX CHAPTER		ALL DISCS								

When two keys are pressed

<div>VIDEO CD</div> <div>DVD</div> <div>CD</div>		<div>▶</div> <div> </div>	<div>Digital DTS</div> <div>MPEG NTSC</div> <div>TEXT DISC</div> <div>ALL DISCS</div>	<div>PBC ANGLE</div> <div>REPEAT 1A-B</div> <div>PGM SHUFFLE</div> <div>DVD CD A B C D</div>	<div><div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div></div></div>	<div>NEXT</div> <div><div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div></div></div>	<div>DISC</div> <div><div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div></div></div>					
<div>TRACK TITLE</div> <div>INDEX CHAPTER</div>												
<div><div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div></div></div>	<div><div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div></div></div>	<div><div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div></div></div>	<div><div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div></div></div>	<div><div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div></div></div>	<div><div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div></div></div>	<div>HOUR</div> <div><div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div></div></div>	<div><div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div></div></div>	<div><div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div></div></div>	<div>MIN</div> <div><div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div></div></div>	<div><div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div></div></div>	<div><div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div></div></div>	<div>SEC</div> <div><div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div></div></div></div>

2-3-3. Remote Commander Key Name Display and Key Code Display
















2-3-3-1. Transition Keys in Self Check Mode

- Remote commander keys except keys transited in self check

2-3-3-2. Operation and Display

When a key on the remote commander is pressed in the Self Check mode, the name of that key is displayed on the FLD. Also, the key name display and the key code display can be switched with the **DISPLAY** key on the remote commander. "NOTHING" is displayed when nothing is entered. Also, VIDEO CD, DVD, and CD segments turn on when a communication error occurred.

Remote commander key name display (at input of **PAUSE** key)

<div>VIDEO CD</div> <div>DVD</div> <div>CD</div>		<div>▶</div> <div> </div>	<div>Digital DTS</div> <div>MPEG NTSC</div> <div>TEXT DISC</div> <div>ALL DISCS</div>	<div>PBC ANGLE</div> <div>REPEAT 1A-B</div> <div>PGM SHUFFLE</div> <div>DVD CD A B C D</div>	<div></div>	<div>NEXT</div> <div></div>	<div>DISC</div> <div></div>				
<div>TRACK TITLE</div> <div>INDEX CHAPTER</div>											
<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div>HOUR</div> <div></div>	<div></div>	<div>MIN</div> <div></div>	<div></div>	<div></div>	<div>SEC</div> <div></div>

Remote commander key code display (at input of **PAUSE** key,
Key code: 39h)












			Digital DTS	PBC ANGLE		NEXT	DISC
MPEG NTSC	REPEAT 1A-B						
TEXT DISC	PGM SHUFFLE						
ALL DISCS	[DVD CD A B C D]						
TRACK TITLE	INDEX CHAPTER		HOUR		MIN		SEC

2-3-6-1. Transition Keys in Self Check Mode

- ### 2-3-6-2. Operation and Display

Display at the start of Grid Test

↓ (Input in CW direction)

VIDEO CD		▶	Digital DTS		PBC ANGLE			NEXT	DISC
DVD			MPEG NTSC		REPEAT 1 A-B				
CD			TEXT DISC		PGM SHUFFLE				
			ALL DISCS		DVD CD A B C D				
TRACK		INDEX							
TITLE		CHAPTER							
				HOUR			MIN		SEC
									



























2-3-7. LED Test Display

2-3-7-1. Transition Keys in Self Check Mode

- ### 2-3-7-2. Operation and Display

LED is switched in order by the input of JOG/SHUTTLE. Also, LED ON/OFF is switched by the input of same key as the function that turns on the LED concerned. For the MULTI LED only, there is no key which switches that function, and therefore use the [RE-TURN] key on the main unit.

FLD display during LED Test

VIDEO CD	▶	Digital DTS	PBC ANGLE		NEXT	DISC
DVD		MPEG NTSC	REPEAT 1A-B			
CD		TEXT DISC	PGM SHUFFLE			
TRACK		INDEX	ALL DISCS	DVD CD A B C D		
TITLE		CHAPTER				
			HOUR		MIN	SEC
						
						
						

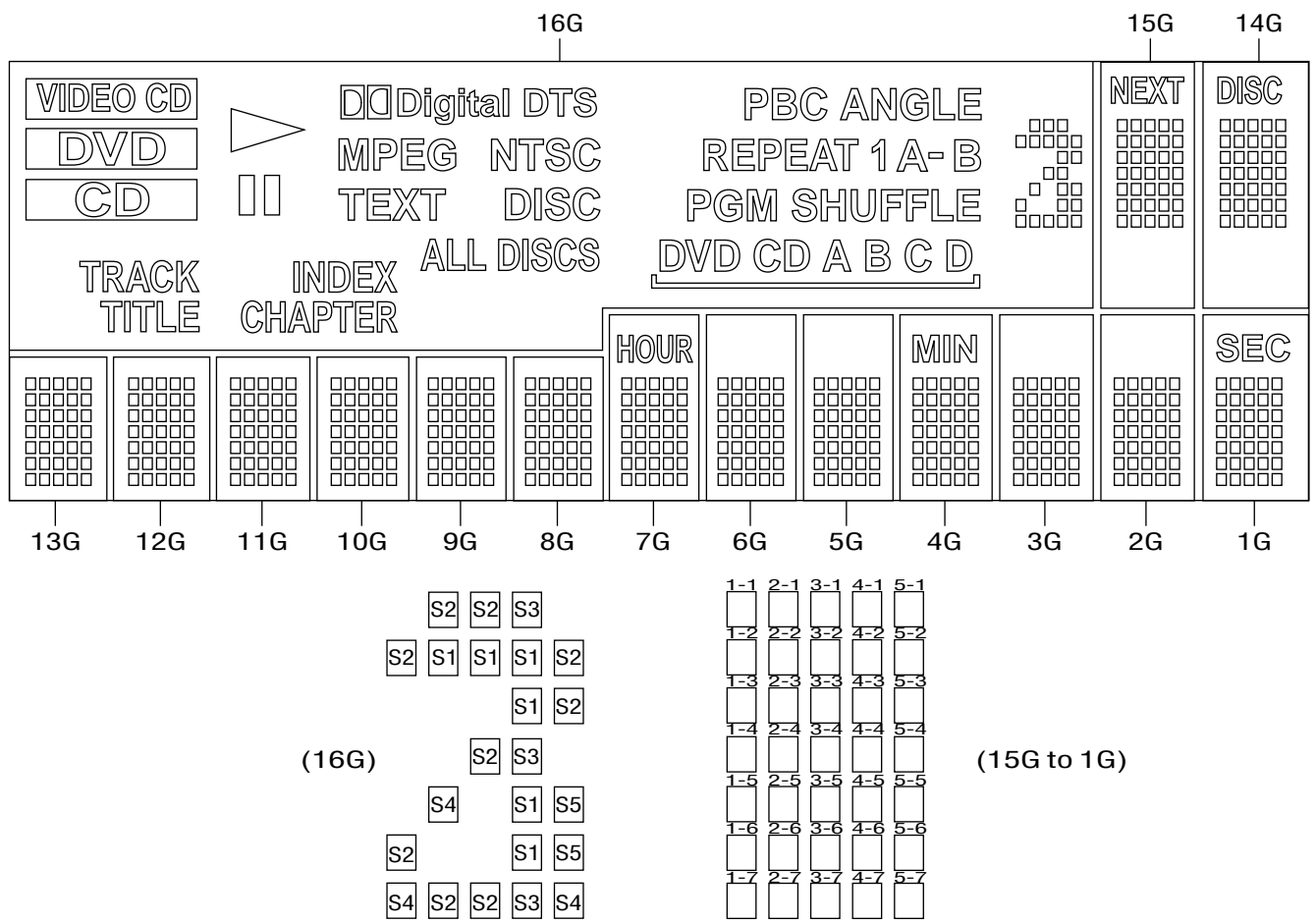
2-3-8. Beep Sound Test

2-3-8-1. Transition Keys in Self Check Mode

- Input of a key on main unit

2-3-8-2. Operation and Display

6-18



ANODE CONNECTION

	16G	15G	14G	13G to 8G	7G	6G to 5G	4G	3G to 2G	1G		16G	15G	14G	13G to 8G	7G	6G to 5G	4G	3G to 2G	1G
P1	VIDEO CD	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	P19	MPEG	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4
P2	DVD	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	P20	TEXT	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4
P3	CD	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	P21	NTSC	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5
P4	TRACK	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	P22	REPEAT	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5
P5	TITLE	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	P23	[REPEAT] 1	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5
P6	▶	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	P24	A-	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5
P7		2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	P25	B	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5
P8	CHAPTER	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	P26	◀	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6
P9	INDEX	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	P27	DVD	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6
P10	Digital	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	P28	CD	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6
P11	DTS	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	P29	A	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6
P12	PBC	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	P30	B	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6
P13	ANGLE	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	P31	C	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7
P14	S1	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	P32	D	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7
P15	S2	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	P33	ALL DISCS	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7
P16	S3	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	P34	DISC	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7
P17	S4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	P35	PGM	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7
P18	S5	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	P36	SHUFFLE	NEXT	DISC	—	—	—	—	—	—

3. TROUBLESHOOTING

3-1. Test Mode is not activated

With the set assembled in the front panel, the Test mode does not become active if any button was pressed by any reason. Under this condition, the power is not turned on even in the normal status. (The set is kept in Standby status = Red LED is kept on) Not only the buttons are inactive, but also a signal from remote commander is not accepted. The IF CON checks the self check port only after the power on reset (only when AC is supplied; not in Standby status). If any button was pressed, the button name should be displayed on the FL display tube. Though no button is pressed this time, display of other than NOTHING implies that the button was pressed.

3-2. Power is not turned on

- ① Red (STANDBY) LED does not light up when AC was supplied. The power (EVER 5.0 V) is not supplied.
X101 is not oscillating.
- ② Red (STANDBY) LED is kept on though POWER button was pressed. Any button is kept pressed.
PONCHK (IF CON pin ⑥) is over 0.1 V.
- ③ Green LED lights up when POWER button was pressed, but red LED lights up again after several seconds. PONCHK (IF CON pin ⑥) is abnormal. (Slow rise time from 0.1 V to 1.5 V. Voltage must be less than 1.5 V)
SYSTEM CONTROL does not operate normally.

SECTION 7 ELECTRICAL ADJUSTMENT

This section describes procedures and instructions necessary for adjusting electrical circuits in this set.

Instruments required:

- 1) Color monitor TV
- 2) Oscilloscope 1 or 2 phenomena, band width over 100 MHz, with delay mode
- 3) Digital voltmeter
- 4) Standard commander RMT-233A (NTSC)
RMT-233P (PAL)
RMT-234A (NTSC)
- 5) DVD reference disc
HLX-501 (J-6090-071-A)(dual layer)(NTSC)
HLX-503 (J-6090-069-A)(single layer)(NTSC)
HLX-504 (J-6090-088-A)(single layer)(NTSC)
HLX-505 (J-6090-089-A)(dual layer)(NTSC)
HLX-506 (J-6090-077-A)(single layer)(PAL)
HLX-507 (J-6090-078-A)(dual layer)(PAL)
- 6) SACD reference disc
HLXA-509 (J-6090-090-A)
Extension cable (J-6090-102-A)

7-1. POWER SUPPLY ADJUSTMENT

1. MPW124V Board

Mode	E-E
Instrument	Digital voltmeter
SW+5 V Check	
Test point	CN101 pin ⑤,⑥
Specification	5.0 ± 0.2 Vdc
SW+3.3 V Check	
Test point	CN101 pin ⑧,⑨
Specification	3.3 ± 0.2 Vdc
EVER+5 V Check	
Test point	CN101 pin ⑦
Specification	5.0 ± 0.2 Vdc
SW +11 V Check	
Test point	CN101 pin ③,④
Specification	11.0 ± 1.0 Vdc
SW -11 V Check	
Test point	CN101 pin ⑭,⑮
Specification	-11.0 ± 1.0 Vdc

Checking method:

- 1) Confirm that each voltage satisfies the specification.

7-2. ADJUSTMENT OF VIDEO SYSTEM

1. Video Level Adjustment (MB-94 BOARD)

<Purpose>

This adjustment is made to satisfy the NTSC/PAL standard, and if not adjusted correctly, the brightness will be too large or small.

Mode	Video level adjustment in test mode
Signal	Color bars
Test point	LINE OUT (VIDEO) connector (75 Ω terminated)
Instrument	Oscilloscope
Adjusting element	RV501
Specification	$1.00 \pm \begin{smallmatrix} +0.04 \\ -0.02 \end{smallmatrix}$ Vp-p

Adjusting method:

- 1) In the test mode initial menu "6" Video Level Adjustment, set so that color bars are generated.
- 2) Adjust the RV501 to attain $1.0 \pm \begin{smallmatrix} +0.04 \\ -0.02 \end{smallmatrix}$ Vp-p.



Fig. 8-1

2. S-terminal

2-1. Y Output Check (MB-94 BOARD)

<Purpose>

Check S-terminal video output. If it is incorrect, pictures will not be displayed correctly in spite of connection to the TV with a S-terminal cable.

Mode	Playback mode
Signal	Color bars
Test point	S VIDEO OUT (S-Y) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	1.00 ± 0.05 Vp-p

Checking method:

- 1) Confirm that the S-Y level is 1.00 ± 0.05 Vp-p.



Fig. 8-2

2-2. C Output Check (MB-94 BOARD)

<Purpose>

Checks S-terminal video output. If it is incorrect picture will not be displayed correctly in spite of connection to the TV with a S-terminal cable.

Mode	Playback mode
Signal	Color bars
Test point	S VIDEO OUT (S-C) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	$A=300 \pm 100$ mVp-p (PAL)

Checking method:

- 1) Confirm that the S-C burst is $A=286 \pm 30$ mVp-p (NTSC), $A=300$ mVp-p (PAL).

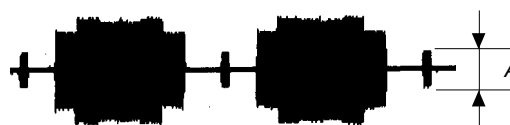


Fig. 8-3

3. Checking Component Video Output (MB-94 BOARD)

Note:

COMPONENT OUT should be set to ON in AEP, UK model.

3-1. Y Output level Check

<Purpose>

This checks component video output Y. If it is incorrect, correct brightness will not be attained when connected to, for instance, projector.

Mode	Playback mode
Signal	Color bars
Test point	COMPONENT VIDEO OUT (Y) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	1.00 ± 0.05 Vp-p

Checking method:

- 1) Confirm that the Y level is 1.00 ± 0.05 Vp-p.



Fig. 8-4

3-2. C_B/B-Y Output level check (MB-94 BOARD)

<Purpose>

This checks component video output B-Y. If it is incorrect, cor-rect colors will not be displayed when connected to, for instance, projector.

Mode	Playback mode
Signal	Color bars
Test point	COMPONENT VIDEO OUT (B-Y) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	700 ± 50 mVp-p

Checking method:

- 1) Confirm that the B-Y level is 700 ± 50 mVp-p.

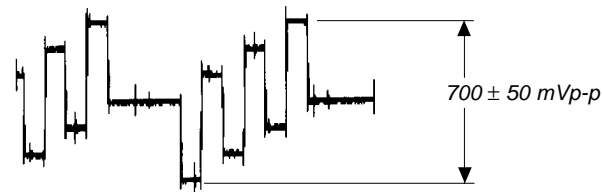


Fig. 8-5

3-3. C_R/R-Y Output level check

<Purpose>

This checks component video output R-Y. If it is incorrect, cor-rect colors will not be displayed when connected to, for instance, projector.

Mode	Playback mode
Signal	Color bars
Test point	COMPONENT VIDEO OUT (R-Y) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	700 ± 50 mVp-p

Checking method:

- 1) Confirm that the R-Y level is 700 ± 50 mVp-p.

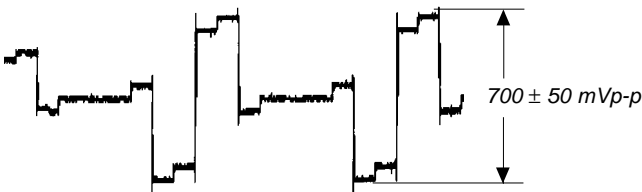


Fig. 8-6

7-3. CHECK OF AUDIO SYSTEM

Mode	Playback mode
Signal	1KHz 0dBs (YEDS-18 (TYPE4) track no.2)
Test point	Audio out (L, R)
Instrument	Oscilloscope
Specification	6.4 ± 0.7 Vp-p

Checking method:

- 1) Confirm that the output level 6.4 ± 0.7 Vp-p.

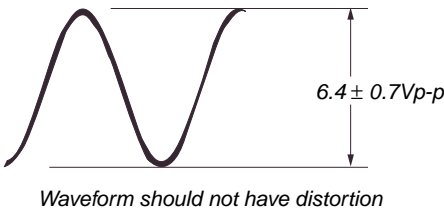


Fig. 8-7

MEMO

SECTION 8

REPAIR PARTS LIST

8-1. EXPLODED VIEWS

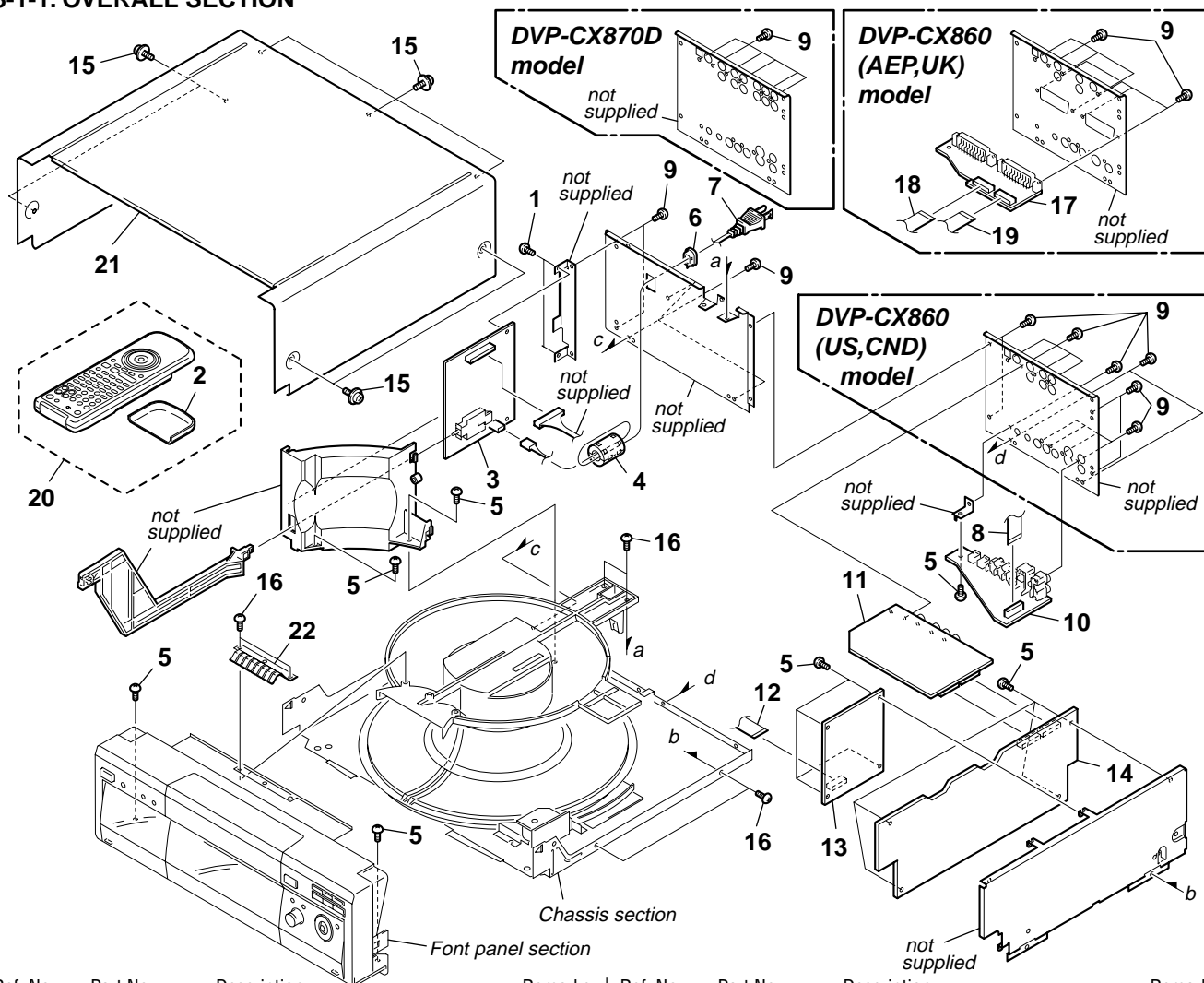
NOTE:

- XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Abbreviation
CND: Canadian model

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

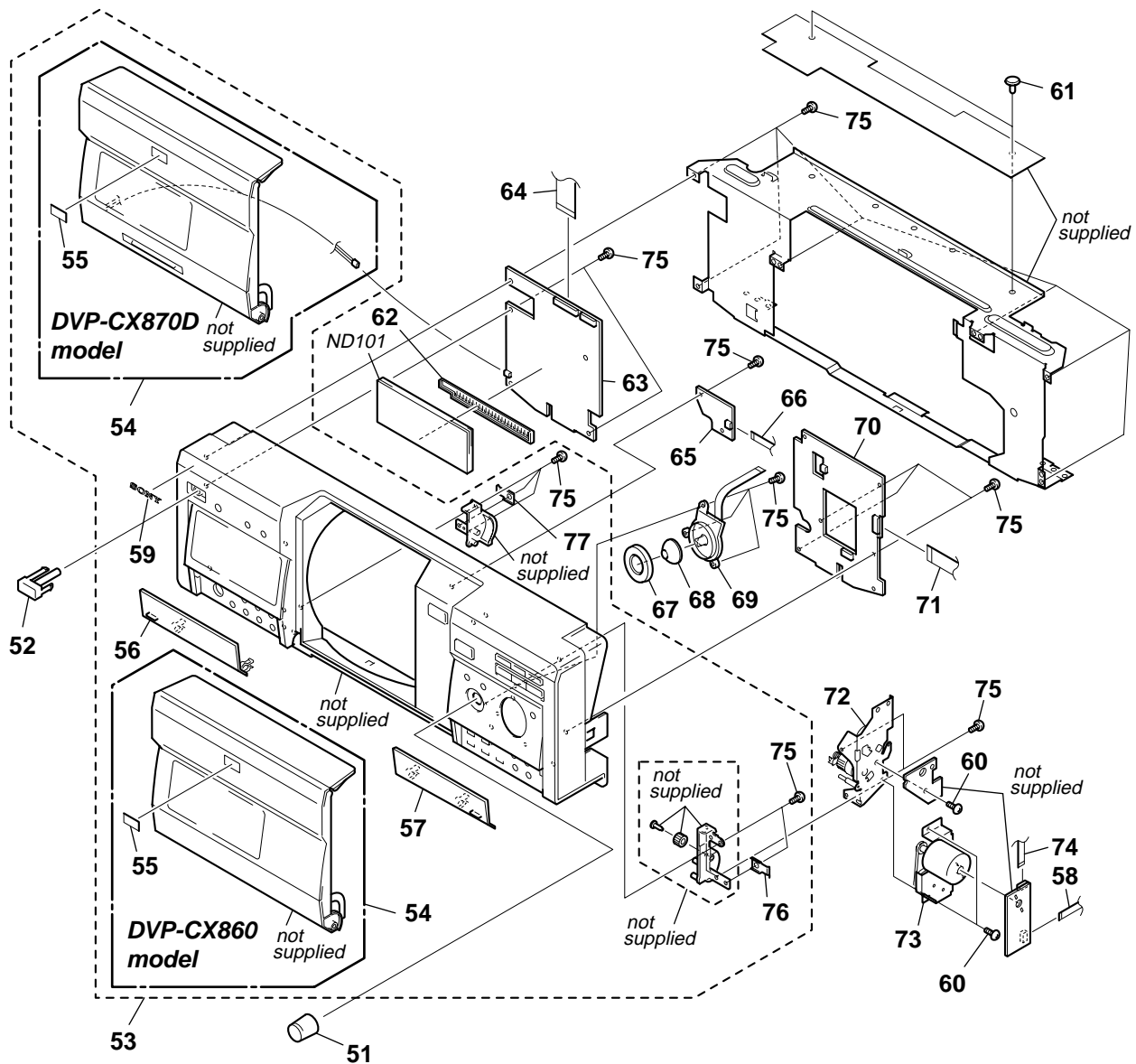
Les composants identifiés par une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

8-1-1. OVERALL SECTION



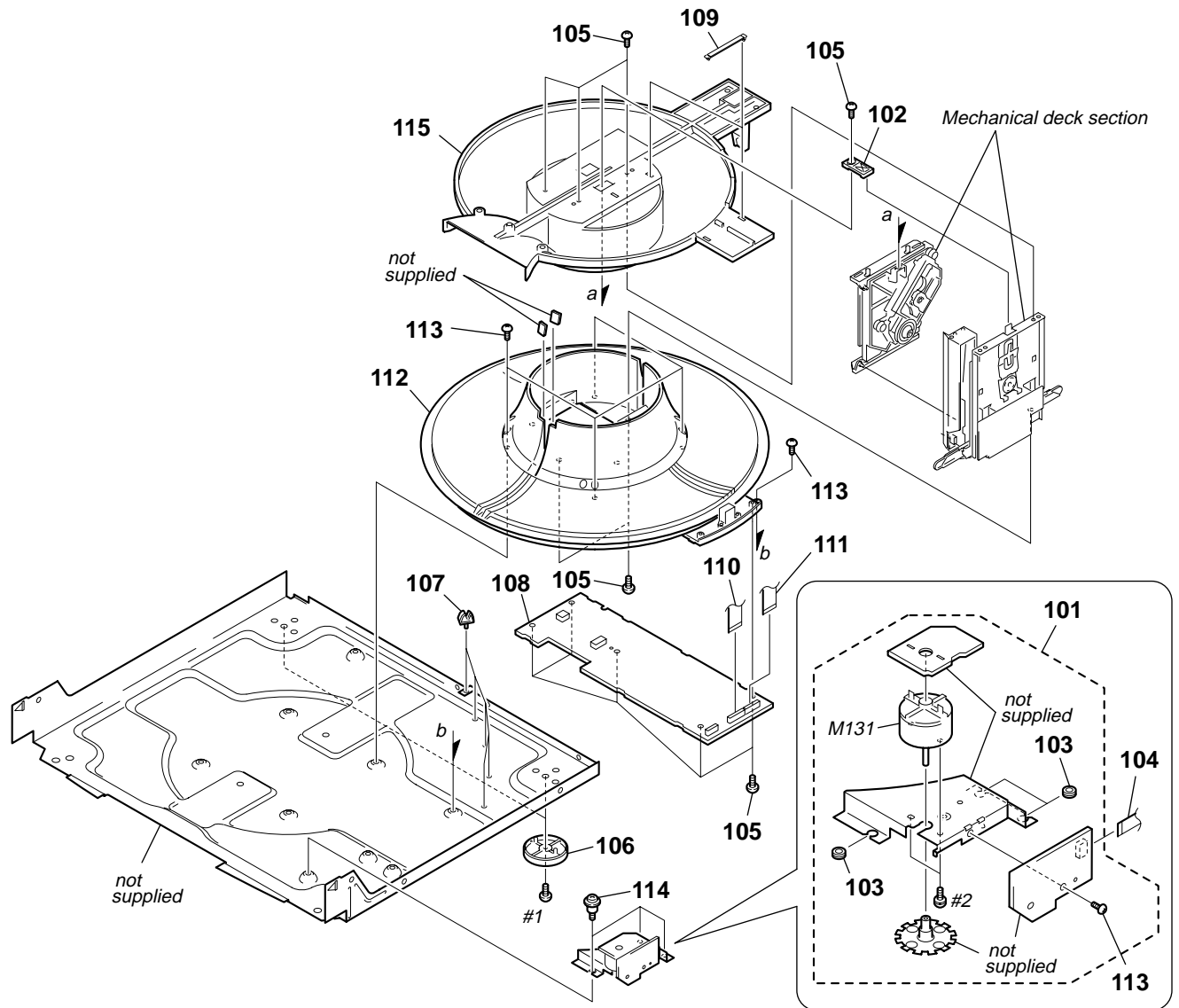
Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	3-970-608-01	SUMITITE (B3), +BV		* 13	A-6065-600-A	MB-94 BOARD, COMPLETE (CX860:AEP,UK)	
2	3-709-493-11	COVER, BATTERY		* 13	A-6065-611-A	MB-94 BOARD, COMPLETE (CX860:US,CND)	
\triangle 3	1-468-512-11	POWER BLOCK (MPW1241)		* 13	A-6065-624-A	MB-94 BOARD, COMPLETE (CX870D)	
		(CX860:US,CND/CX870D)		* 14	A-6065-601-A	AI-20 BOARD, COMPLETE (CX860:AEP,UK)	
\triangle 3	1-468-512-21	POWER BLOCK (MPW1141) (CX860:AEP,UK)		* 14	A-6065-612-A	AI-20 BOARD, COMPLETE (CX860:US,CND)	
4	1-500-386-11	FILTER, CLAMP (FERRITE CORE)					
5	3-970-608-01	SUMITITE (B3), +BV		* 14	A-6065-625-A	AI-20 BOARD, COMPLETE (CX870D)	
6	4-966-267-12	BUSHING (FBS001), CORD		15	3-710-901-41	SCREW, TAPPING	
\triangle 7	1-782-960-11	CORD, POWER (CX860:AEP,UK)		16	3-970-608-21	SUMITITE (B3), +BV	
\triangle 7	1-783-531-31	CORD, POWER (CX860:US,CND)		* 17	A-6065-607-A	ER-12 BOARD, COMPLETE (CX860:AEP,UK)	
\triangle 7	1-757-281-11	CORD, POWER (CX870D)		18	1-757-236-11	CABLE, FLAT (FAE-003) (CX860:AEP,UK)	
8	1-757-222-11	CABLE, FLAT (FAC-011)		19	1-757-235-11	CABLE, FLAT (FAE-002) (CX860:AEP,UK)	
9	3-053-984-11	SCREW(+BV/CU) (CX870D)		20	1-476-249-61	REMOTE COMMANDER (RMT-D123A)	
9	3-970-608-51	SUMITITE (B3), +BV (CX860)					
* 10	A-6065-603-A	CV-34 BOARD, COMPLETE (CX860:AEP,UK)		20	1-476-249-71	REMOTE COMMANDER (RMT-D123P)	
* 10	A-6065-614-A	CV-34 BOARD, COMPLETE (CX860:US,CND)					
				20	1-476-249-81	REMOTE COMMANDER (RMT-D124A)	
* 10	A-6065-627-A	CV-34 BOARD, COMPLETE (CX870D)					
* 11	A-6065-602-A	CH-98 BOARD, COMPLETE (CX860:AEP,UK)		21	3-066-717-01	CASE, UPPER (CX860)	
* 11	A-6065-613-A	CH-98 BOARD, COMPLETE (CX860:US,CND)					
* 11	A-6065-626-A	CH-98 BOARD, COMPLETE (CX870D)		21	A-6062-513-A	CASE ASSY, UPPER (CX870D)	
12	1-757-225-11	CABLE, FLAT (FAM-007)		22	3-065-531-01	SPRING (H), GROUND PLATE	

8-1-2. FRONT PANEL SECTION



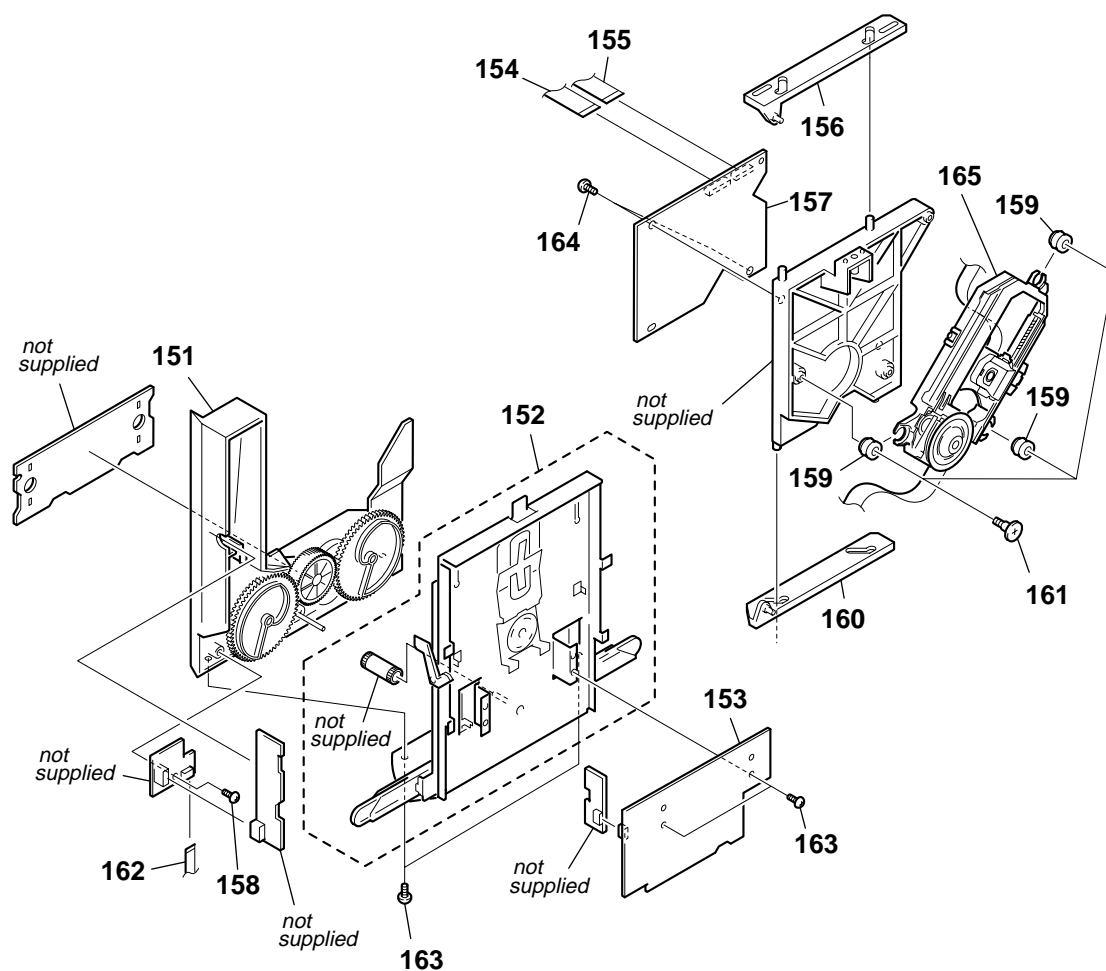
Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
51	3-064-055-01	KNOB(75), ACS/AMS (CX870D)		* 63	A-6065-623-A	FR-173 BOARD, COMPLETE (CX870D)	
51	3-064-088-01	KNOB, ACS/AMS (CX860)		64	1-757-224-11	CABLE, FLAT (FAF-004)	
52	3-064-082-01	BUTTON, POWER		* 65	A-6065-609-A	SW-345 BOARD, COMPLETE	
53	A-6062-486-A	PANEL ASSY, FRONT (CX860:AEP,UK)		66	1-757-231-11	CABLE, FLAT (FLS-003)	
53	A-6062-489-A	PANEL ASSY, FRONT (CX860:US,CND)		67	3-058-939-31	RING, SHUTTLE (CX860)	
53	A-6062-499-A	PANEL ASSY, FRONT (CX870D)		67	X-3951-012-1	RING(75) ASSY, SHUTTLE (CX870D)	
54	A-6062-487-A	DOOR BLOCK ASSY (71) (CX860:AEP,UK)		68	3-058-938-31	STICK, CURSOR (CX860)	
54	A-6062-490-A	DOOR BLOCK ASSY (CX860:US,CND)		68	3-064-056-01	STICK (75), CURSOR (CX870D)	
54	A-6062-500-A	DOOR BLOCK ASSY (CX870D)		69	1-476-273-11	ENCODER, ROTARY	
55	3-975-726-41	EMBLEM, DVD		* 70	A-6065-608-A	FL-115 BOARD, COMPLETE	
56	X-3951-019-1	PANEL (L) ASSY, SUB		71	1-757-230-11	CABLE, FLAT (FLR-003)	
57	X-3951-018-1	PANEL (R) ASSY, SUB		72	A-6062-491-A	GEAR(A) BLOCK ASSY, DRIVING	
58	1-757-234-11	CABLE, FLAT (FDD-003)		73	A-6062-492-A	GEAR(B) BLOCK ASSY, DRIVING	
59	4-963-404-22	EMBLEM (5-A), SONY		74	1-757-232-11	CABLE, FLAT (FTD-001)	
60	3-970-608-01	SUMITITE (B3), +BV		75	4-951-620-01	SCREW (2.6X8), +BVTP	
61	3-531-576-01	RIVET		76	3-064-089-01	SPRING, SP	
62	3-064-174-01	HOLDER, INDICATION		77	3-064-089-11	SPRING, SP	
* 63	A-6065-599-A	FR-173 BOARD, COMPLETE (CX860:AEP,UK)		ND101	1-517-834-21	FLUORESCENT INDICATOR TUBE	
* 63	A-6065-610-A	FR-173 BOARD, COMPLETE (CX860:US,CND)					

8-1-3. CHASSIS SECTION



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
101	A-6062-493-A	DRIVING ASSY, T		109	3-064-084-01	CLAMP (FCR-60), FLAT	
102	3-064-063-01	LINK, CHUCK DRIVING		110	1-757-223-11	CABLE, FLAT (FAK-001)	
103	3-570-118-00	CUSHION, MOTOR		111	1-757-228-11	CABLE, FLAT (FMC-014)	
104	1-757-229-11	CABLE, FLAT (FTC-003)		112	A-6062-496-A	TABLE ASSY, TURN (CX860)	
105	3-058-511-21	+BV IBR		112	A-6062-502-A	TABLE ASSY (75), TURN (CX870D)	
106	4-948-027-11	FOOT (DIA. 50)		113	3-970-608-01	SUMITITE (B3), +BV	
107	4-070-274-01	CLAMP		114	3-064-062-01	SCREW, CUSHION STOPPER	
* 108	A-6065-604-A	CK-97 BOARD, COMPLETE (CX860:AEP,UK)		115	X-3951-016-1	GUIDE ASSY, CENTER	
* 108	A-6065-615-A	CK-97 BOARD, COMPLETE (CX860:US,CND)		M131	1-541-632-11	MOTOR, DC	
* 108	A-6065-628-A	CK-97 BOARD, COMPLETE (CX870D)					

8-1-4. MECHANISM SECTION



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
151	A-6062-494-A	CHASSIS BLOCK ASSY, MECHANICAL		159	3-057-023-01	INSULATOR (RB)	
152	A-6062-495-A	FRAME BLOCK ASSY, CHUCK		160	3-064-081-01	SLIDER (B)	
153	A-6065-616-A	LS-55 BOARD, COMPLETE		161	4-981-923-01	SCREW (M), STEP	
154	1-757-226-11	CABLE, FLAT (FMK-005)		162	1-757-233-11	CABLE, FLAT (FLC-002)	
155	1-757-227-11	CABLE, FLAT (FMK-006)		163	3-970-608-21	SUMITITE (B3), +BV	
156	3-064-080-01	SLIDER (U)		164	4-951-620-01	SCREW (2.6X8), +BVTP	
* 157	A-6065-632-A	TK-59 BOARD, COMPLETE		△ 165	A-6062-397-A	DEVICE, OPTICAL KHM220AAA/J1RP1	(SERVICE)
158	3-669-480-11	+PTPWH2					

Note :

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Note :

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

8-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
uF: μ F
- RESISTORS
All resistors are in ohms.
METAL: metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F: nonflammable
- COILS
uH: μ H
- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A..., uPA..., μ PA...,
uPB..., μ PB..., uPC..., μ PC...,
uPD..., μ PD...

When indicating parts by reference number, please include the board name.

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Abbreviation
CND: Canadian model

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
*	A-6065-601-A	AI-20 BOARD, COMPLETE (CX860:AEP,UK) *****		C212	1-126-926-11	ELECT 1000uF 20% 10V (CX870D)	
*	A-6065-612-A	AI-20 BOARD, COMPLETE (CX860:US,CND) *****		C213	1-107-823-11	CERAMIC CHIP 0.47uF 10% 16V (CX860:AEP,UK/CX870D)	
*	A-6065-625-A	AI-20 BOARD, COMPLETE (CX870D) ***** (Ref.No.:3000Series)		C214	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V (CX860)	
< CAPACITOR >				C215	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V (CX860)	
C101	1-110-501-11	CERAMIC CHIP 0.33uF 10% 16V		C216	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C102	1-104-664-11	ELECT 47uF 20% 16V		C217	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C103	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		C218	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V (CX860)	
C104	1-104-665-11	ELECT 100uF 20% 25V		C219	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V (CX860:AEP,UK)	
C114	1-128-551-11	ELECT 22uF 20% 25V		C220	1-126-685-11	ELECT 47uF 20% 25V (CX870D)	
C115	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		C220	1-104-660-11	ELECT 47uF 20% 16V (CX860)	
C116	1-128-551-11	ELECT 22uF 20% 25V		C221	1-126-964-11	ELECT 10uF 20% 50V (CX860:AEP,UK)	
C117	1-128-551-11	ELECT 22uF 20% 25V		C222	1-104-664-11	ELECT 47uF 20% 16V (CX860)	
C118	1-128-551-11	ELECT 22uF 20% 25V		C222	1-128-552-51	ELECT 47uF 20% 63V (CX870D)	
C119	1-128-551-11	ELECT 22uF 20% 25V		C223	1-136-850-11	MYLAR 0.1uF 5% 63V (CX870D)	
C122	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V		C225	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V	
C123	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		C226	1-104-664-11	ELECT 47uF 20% 16V (CX860)	
C124	1-104-664-11	ELECT 47uF 20% 25V		C226	1-128-552-51	ELECT 47uF 20% 63V (CX870D)	
C125	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		C227	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C131	1-109-982-11	CERAMIC CHIP 1uF 10% 10V		C228	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C132	1-104-665-11	ELECT 100uF 20% 10V		C229	1-136-850-11	MYLAR 0.1uF 5% 63V (CX870D)	
C133	1-126-933-11	ELECT 100uF 20% 16V		C230	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V (CX860)	
C134	1-104-664-11	ELECT 47uF 20% 16V		C231	1-128-202-11	ELECT 220uF 20% 63V (CX870D)	
C135	1-109-982-11	CERAMIC CHIP 1uF 10% 10V		C232	1-128-196-91	ELECT 4.7uF 20% 63V (CX870D)	
C136	1-126-924-11	ELECT 330uF 20% 6.3V		C232	1-126-960-11	ELECT 1uF 20% 50V (CX860)	
C137	1-104-664-11	ELECT 47uF 20% 16V		C233	1-126-933-11	ELECT 100uF 20% 16V	
C138	1-109-982-11	CERAMIC CHIP 1uF 10% 10V					
C139	1-104-665-11	ELECT 100uF 20% 10V					
C201	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V					
C203	1-126-965-11	ELECT 22uF 20% 50V (CX870D)					
C208	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V (CX870D)					
C209	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V (CX870D)					
C210	1-126-965-11	ELECT 22uF 20% 50V (CX870D)					
C211	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V (CX870D)					
C212	1-126-934-11	ELECT 220uF 20% 16V (CX860)					

Ref. No.	Part No.	Description			Remarks	Ref. No.	Part No.	Description			Remarks
C234	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	C266	1-137-605-11	MYLAR	0.00022uF	5%	50V
C235	1-126-960-11	ELECT	1uF	20%	50V (CX860)	C267	1-163-255-11	CERAMIC CHIP	150PF	5%	(CX870D) 50V
C235	1-124-733-91	ELECT	10uF	20%	63V (CX870D)	C268	1-163-267-11	CERAMIC CHIP	470PF	5%	(CX870D) 50V
C236	1-136-850-11	MYLAR	0.1uF	5%	63V (CX870D)	C269	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C237	1-104-658-91	ELECT	100uF	20%	10V (CX860)	C270	1-135-643-11	MYLAR	0.00022uF	5%	50V (CX870D)
C237	1-128-552-51	ELECT	47uF	20%	63V (CX870D)	C271	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V (CX870D)
C238	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V (CX860)	C272	1-163-255-11	CERAMIC CHIP	150PF	5%	50V (CX870D)
C239	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V (CX860)	C273	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V (CX870D)
C240	1-163-015-91	CERAMIC CHIP	0.0033uF	10%	50V (CX870D)	C274	1-135-641-11	MYLAR	0.00015uF	5%	50V (CX870D)
C241	1-163-015-91	CERAMIC CHIP	0.0033uF	10%	50V (CX870D)	C275	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V (CX860:AEP,UK/CX870D)
C244	1-104-658-11	ELECT	100uF	20%	10V (CX860)	C276	1-136-850-11	MYLAR	0.1uF	5%	63V (CX870D)
C244	1-119-834-11	ELECT	22uF	20%	63V (CX870D)	C277	1-126-965-11	ELECT	22uF	20%	50V (CX870D)
C245	1-163-015-11	CERAMIC CHIP	0.0033uF	10%	50V (CX870D)	C278	1-115-340-11	CERAMIC CHIP	0.22uF	10%	25V (CX870D)
C246	1-163-015-11	CERAMIC CHIP	0.0033uF	10%	50V (CX870D)	C279	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V (CX860)
C249	1-128-552-51	ELECT	47uF	20%	63V (CX870D)	C280	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V (CX860)
C250	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V (CX870D)	C282	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C251	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V (CX870D)	C283	1-126-965-11	ELECT	22uF	20%	50V (CX860)
C252	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V (CX860:AEP,UK/CX870D)	C283	1-124-725-81	ELECT	100uF	20%	50V (CX870D)
C253	1-135-643-11	MYLAR	0.00022uF	5%	50V (CX870D)	C284	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C254	1-135-643-11	MYLAR	0.00022uF	5%	50V (CX870D)	C285	1-163-267-11	CERAMIC CHIP	470PF	5%	50V (CX860:AEP,UK)
C255	1-163-255-11	CERAMIC CHIP	150PF	5%	50V (CX870D)	C286	1-163-267-11	CERAMIC CHIP	470PF	5%	50V (CX860:AEP,UK)
C256	1-163-255-11	CERAMIC CHIP	150PF	5%	50V (CX870D)	< CONNECTOR >					
C257	1-135-641-11	MYLAR	0.00015uF	5%	50V (CX870D)	CN101	1-506-480-11	PIN, CONNECTOR	15P		
C258	1-163-267-11	CERAMIC CHIP	470PF	5%	50V (CX870D)	CN102	1-794-790-11	CONNECTOR, BOARD TO BOARD	28P		
C259	1-110-220-11	MYLAR	820PF	5%	50V (CX870D)	CN103	1-785-696-11	CONNECTOR, FFC/FPC	15P (CX860:AEP,UK)		
C260	1-164-686-11	CERAMIC CHIP	0.0015uF	5%	50V (CX870D)	CN104	1-691-047-41	HOUSING, CONNECTOR	15P		
C262	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V (CX860:AEP,UK/CX870D)	CN201	1-794-790-11	CONNECTOR, BOARD TO BOARD	28P		
C263	1-110-220-11	MYLAR	820PF	5%	50V (CX870D)	CN202	1-580-857-11	CONNECTOR, BOARD TO BOARD	15P		
C264	1-164-686-11	CERAMIC CHIP	0.0015uF	5%	50V (CX870D)	CN203	1-580-857-11	CONNECTOR, BOARD TO BOARD	15P		
C265	1-110-221-11	MYLAR	0.001uF	5%	50V (CX870D)	* CN204	1-778-236-11	CONNECTOR, FFC/FPC	11P (CX860:AEP,UK)		
						CN301	1-785-697-11	CONNECTOR, FFC/FPC	18P		
						* CN302	1-568-938-11	PIN, CONNECTOR	11P		
						CN307	1-774-975-11	CONNECTOR, FFC/FPC	16P		
						CN308	1-815-171-11	CONNECTOR, FFC/FPC	23P		
						< DIODE >					
						D102	8-719-914-45	DIODE	DAP202K (CX860:AEP,UK)		
						D201	8-719-914-47	DIODE	DAN202K (CX860:AEP,UK/CX870D)		
						D202	8-719-988-61	DIODE	1SS355TE-17 (CX860:AEP,UK)		
						D203	8-719-914-47	DIODE	DAN202K (CX870D)		
						D205	8-719-072-27	DIODE	MA22748001S0		

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
D206	8-719-988-61	DIODE 1SS355TE-17		JR016	1-216-295-11	SHORT	0
D209	8-719-914-43	DIODE DAN202K		JR017	1-216-295-11	SHORT	0
D210	8-719-914-43	DIODE DAN202K		JR018	1-216-296-91	SHORT	0
< TERMINAL >				JR019	1-216-295-11	SHORT	0
* ET101	1-537-738-21	TERMINAL, EARTH		JR020	1-216-295-11	SHORT	0
* ET201	1-537-738-21	TERMINAL, EARTH		JR021	1-216-295-11	SHORT	0
* ET202	1-537-738-21	TERMINAL, EARTH		JR022	1-216-296-91	SHORT	0
* ET301	1-537-738-21	TERMINAL, EARTH		JR024	1-216-296-91	SHORT	0
* ET302	1-537-738-21	TERMINAL, EARTH		JR025	1-216-295-11	SHORT	0
< FERRITE BEAD >				JR026	1-216-295-11	SHORT	0
FB101	1-469-324-21	FERRITE	OUH	JR027	1-216-295-11	SHORT	0
FB102	1-469-324-21	FERRITE	OUH	JR029	1-216-296-91	SHORT	0
FB103	1-469-324-21	FERRITE	OUH	JR030	1-216-296-91	SHORT	0
FB104	1-469-324-21	FERRITE	OUH	JR031	1-216-295-11	SHORT	0
FB105	1-469-324-21	FERRITE	OUH	JR032	1-216-296-91	SHORT	0
FB106	1-469-324-21	FERRITE	OUH	JR033	1-216-296-91	SHORT	0
FB107	1-469-324-21	FERRITE	OUH	JR034	1-216-295-11	SHORT	0
FB108	1-469-324-21	FERRITE	OUH	JR035	1-216-295-11	SHORT	0
FB201	1-414-230-22	INDUCTOR	OUH	JR044	1-216-296-91	SHORT	0
FB202	1-414-230-22	INDUCTOR	OUH	< COIL >			
FB203	1-414-230-22	INDUCTOR	OUH	L301	1-408-599-31	INDUCTOR	4.7uH
FB204	1-414-230-22	INDUCTOR	OUH	< IC LINK >			
FB301	1-469-324-21	FERRITE	OUH	△ PS001	1-533-593-11	LINK, IC (2.0A)	
FB302	1-469-324-21	FERRITE	OUH	< TRANSISTOR >			
FB303	1-469-324-21	FERRITE	OUH	Q104	8-729-421-19	TRANSISTOR	UN2213
FB304	1-469-324-21	FERRITE	OUH	Q105	8-729-424-08	TRANSISTOR	UN2111
< IC >				Q201	8-729-421-19	TRANSISTOR	UN2213 (CX870D)
IC101	8-759-667-18	IC PQ018EZ01ZP		Q202	8-729-027-53	TRANSISTOR	DTC124TKA-T146
IC102	8-759-822-95	IC L79M05T-FA		(CX860:AEP,UK/CX870D)			
IC103	8-759-667-63	IC LA7109-TLM		Q203	8-729-424-02	TRANSISTOR	2SB709A-QR
IC202	8-759-668-03	IC CXD9543Q	(CX870D)	(CX860:AEP,UK/CX870D)			
IC203	8-759-667-85	IC CXD9545Q	(CX860)	Q204	8-729-230-72	TRANSISTOR	2SA1362YG
IC204	8-759-669-29	IC CXD9544MR		Q205	8-729-421-19	TRANSISTOR	UN2213
IC205	8-759-377-66	IC LC78817M	(CX860:AEP,UK)	Q206	8-729-027-53	TRANSISTOR	DTC124TKA-T146
IC206	8-759-667-19	IC IC UPC29M08T-E1		Q207	8-729-216-22	TRANSISTOR	2SA1162-G
IC207	8-759-052-52	IC L78M05T-FA		Q208	8-729-424-18	TRANSISTOR	UN2113-TX
IC208	8-759-684-22	IC IC BA15532F-E2	(CX870D)	(CX860:AEP,UK/CX870D)			
IC209	8-759-425-23	IC BA4558F	(CX870D)	Q209	8-729-027-53	TRANSISTOR	DTC124TKA-T146
IC210	8-759-425-23	IC BA4558F	(CX860:AEP,UK)	(CX860:AEP,UK/CX870D)			
IC210	8-759-684-22	IC IC BA15532F-E2	(CX870D)	Q210	8-729-424-02	TRANSISTOR	2SB709A-QR
< JUMPER RESISTOR >				(CX860:AEP,UK/CX870D)			
JR001	1-216-296-91	SHORT	0	< RESISTOR >			
JR002	1-216-296-91	SHORT	0	R104	1-216-295-11	SHORT	0
JR003	1-216-296-91	SHORT	0	R105	1-216-295-11	SHORT	0
JR004	1-216-296-91	SHORT	0	R106	1-216-295-11	SHORT	0
JR005	1-216-295-11	SHORT	0	R111	1-216-295-11	SHORT	0 (CX860:US,CND/CX870D)
JR006	1-216-296-91	SHORT	0	R112	1-216-073-00	METAL CHIP	10K 5% 1/10W
JR007	1-216-295-11	SHORT	0	(CX860:AEP,UK)			
JR008	1-216-295-11	SHORT	0	R114	1-216-089-11	RES-CHIP	47K 5% 1/10W
JR009	1-216-296-91	SHORT	0	R115	1-216-089-11	RES-CHIP	47K 5% 1/10W
JR010	1-216-296-91	SHORT	0	R116	1-216-089-11	RES-CHIP	47K 5% 1/10W
JR011	1-216-295-11	SHORT	0	R117	1-216-089-11	RES-CHIP	47K 5% 1/10W
JR012	1-216-296-91	SHORT	0	R119	1-216-089-11	RES-CHIP	47K 5% 1/10W
JR013	1-216-296-91	SHORT	0				
JR014	1-216-296-91	SHORT	0				
JR015	1-216-295-11	SHORT	0				

Note :

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Note :

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AI-20

Ref. No.	Part No.	Description	Remarks		
R120	1-216-089-11	RES-CHIP	47K	5%	1/10W
R121	1-216-073-00	METAL CHIP	10K	5%	1/10W
R122	1-216-073-00	METAL CHIP	10K	5%	1/10W
R123	1-216-073-00	METAL CHIP	10K	5%	1/10W
R125	1-216-295-11	SHORT	0		
R126	1-216-295-11	SHORT	0		
R127	1-216-295-11	SHORT	0		
R128	1-216-295-11	SHORT	0		
R129	1-216-295-11	SHORT	0		
R130	1-216-295-11	SHORT	0		
R131	1-216-021-00	METAL CHIP	68	5%	1/10W (CX860:AEP,UK)
R132	1-216-295-11	SHORT	0	(CX860:AEP,UK)	
R133	1-216-295-11	SHORT	0		
R142	1-216-295-11	SHORT	0		
R201	1-216-295-11	SHORT	0		
R202	1-216-295-11	SHORT	0		
R203	1-216-295-11	SHORT	0		
R204	1-216-295-11	SHORT	0		
R206	1-216-295-11	SHORT	0		
R207	1-216-295-11	SHORT	0		
R208	1-216-295-11	SHORT	0	(CX870D)	
R209	1-216-295-11	SHORT	0		
R211	1-216-295-11	SHORT	0		
R212	1-216-295-11	SHORT	0		
R213	1-216-295-11	SHORT	0		
R214	1-216-295-11	SHORT	0		
R216	1-216-295-11	SHORT	0		
R221	1-216-001-00	METAL CHIP	10	5%	1/10W (CX870D)
R223	1-216-073-00	METAL CHIP	10K	5%	1/10W (CX870D)
R225	1-216-295-11	SHORT	0	(CX870D)	
R228	1-216-001-00	METAL CHIP	10	5%	1/10W (CX870D)
R230	1-216-025-11	RES-CHIP	100	5%	1/10W (CX870D)
R231	1-216-049-11	RES-CHIP	1K	5%	1/10W (CX870D)
R232	1-216-049-11	RES-CHIP	1K	5%	1/10W (CX870D)
R234	1-216-295-11	SHORT	0	(CX860)	
R235	1-216-073-00	METAL CHIP	10K	5%	1/10W (CX870D)
R238	1-216-025-11	RES-CHIP	100	5%	1/10W
R239	1-216-033-00	METAL CHIP	220	5%	1/10W
R240	1-216-033-00	METAL CHIP	220	5%	1/10W
R241	1-216-295-11	SHORT	0		
R242	1-216-295-11	SHORT	0		
R243	1-216-295-11	SHORT	0		
R244	1-216-295-11	SHORT	0		
R246	1-216-073-00	METAL CHIP	10K	5%	1/10W (CX860:AEP,UK/CX870D)
R249	1-216-073-00	METAL CHIP	10K	5%	1/10W (CX860:AEP,UK/CX870D)

Ref. No.	Part No.	Description	Remarks		
R250	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R251	1-216-033-00	METAL CHIP	220	5%	1/10W
R255	1-216-051-00	METAL CHIP	1.2K	5%	1/10W (CX870D)
R256	1-216-051-00	METAL CHIP	1.2K	5%	1/10W (CX870D)
R257	1-216-051-00	METAL CHIP	1.2K	5%	1/10W (CX870D)
R258	1-216-051-00	METAL CHIP	1.2K	5%	1/10W (CX870D)
R259	1-216-051-00	METAL CHIP	1.2K	5%	1/10W (CX870D)
R259	1-216-295-11	SHORT	0	(CX860:AEP,UK)	
R260	1-216-051-00	METAL CHIP	1.2K	5%	1/10W (CX870D)
R260	1-216-295-11	SHORT	0	(CX860:AEP,UK)	
R261	1-216-295-11	SHORT	0	(CX870D)	
R262	1-216-089-11	RES-CHIP	47K	5%	1/10W (CX860:AEP,UK/CX870D)
R263	1-216-063-91	RES-CHIP	3.9K	5%	1/10W (CX870D)
R264	1-216-063-91	RES-CHIP	3.9K	5%	1/10W (CX870D)
R265	1-216-063-91	RES-CHIP	3.9K	5%	1/10W (CX870D)
R266	1-216-063-91	RES-CHIP	3.9K	5%	1/10W (CX870D)
R267	1-216-051-00	METAL CHIP	1.2K	5%	1/10W (CX870D)
R267	1-216-061-00	METAL CHIP	3.3K	5%	1/10W (CX860:AEP,UK)
R268	1-216-051-00	METAL CHIP	1.2K	5%	1/10W (CX870D)
R268	1-216-061-00	METAL CHIP	3.3K	5%	1/10W (CX860:AEP,UK)
R269	1-216-049-11	RES-CHIP	1K	5%	1/10W (CX870D)
R270	1-216-049-11	RES-CHIP	1K	5%	1/10W (CX870D)
R271	1-216-061-00	METAL CHIP	3.3K	5%	1/10W (CX870D)
R272	1-216-061-00	METAL CHIP	3.3K	5%	1/10W (CX870D)
R273	1-216-061-00	METAL CHIP	3.3K	5%	1/10W (CX870D)
R274	1-216-061-00	METAL CHIP	3.3K	5%	1/10W (CX870D)
R275	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R276	1-216-063-91	RES-CHIP	3.9K	5%	1/10W (CX870D)
R277	1-216-075-00	METAL CHIP	12K	5%	1/10W (CX870D)
R278	1-216-075-00	METAL CHIP	12K	5%	1/10W (CX870D)
R278	1-216-295-11	SHORT	0	(CX860:AEP,UK)	
R279	1-216-063-91	RES-CHIP	3.9K	5%	1/10W (CX870D)
R280	1-216-075-00	METAL CHIP	12K	5%	1/10W (CX870D)
R281	1-216-075-00	METAL CHIP	12K	5%	1/10W (CX860:AEP,UK/CX870D)
R282	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)

Ref. No.	Part No.	Description	Remarks			Ref. No.	Part No.	Description	Remarks		
R283	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)	*	A-6065-602-A	CH-98 BOARD, COMPLETE (CX860:AEP,UK) *****			
R284	1-216-295-11	SHORT	0 (CX860:AEP,UK/CX870D)			*	A-6065-613-A	CH-98 BOARD, COMPLETE (CX860:US,CND) *****			
R285	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)	*	A-6065-626-A	CH-98 BOARD, COMPLETE (CX870D) ***** (Ref.No.;1000Series)			
R286	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)			< CAPACITOR >			
R287	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)						
R288	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)	C402	1-163-135-00	CERAMIC CHIP	560PF	5%	50V (CX860)
R289	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)	C403	1-163-135-00	CERAMIC CHIP	560PF	5%	50V (CX860)
R289	1-216-295-11	SHORT	0 (CX860:AEP,UK)			C404	1-126-964-11	ELECT	10uF	20%	50V (CX860)
R290	1-216-295-11	SHORT	0 (CX860:AEP,UK/CX870D)								
R291	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)	C405	1-128-200-11	ELECT	47uF	20%	63V (CX870D)
						C406	1-137-256-11	MYLAR	0.00015uF	5%	50V (CX870D)
R292	1-216-063-91	RES-CHIP	3.9K	5%	1/10W (CX870D)						
R293	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)	C407	1-137-256-11	MYLAR	0.00015uF	5%	50V (CX870D)
R294	1-216-075-00	METAL CHIP	12K	5%	1/10W (CX870D)	C408	1-136-850-11	MYLAR	0.1uF	5%	63V (CX870D)
R295	1-216-055-00	METAL CHIP	1.8K	5%	1/10W (CX870D)	C409	1-128-200-11	ELECT	47uF	20%	63V (CX870D)
R295	1-216-295-11	SHORT	0 (CX860:AEP,UK)			C409	1-126-935-11	ELECT	470uF	20%	6.3V (CX860)
R296	1-216-075-00	METAL CHIP	12K	5%	1/10W (CX870D)	C410	1-163-255-11	CERAMIC CHIP	150PF	5%	50V (CX860)
R296	1-216-295-11	SHORT	0 (CX860:AEP,UK)								
R297	1-216-073-00	METAL CHIP	10K	5%	1/10W	C411	1-163-255-11	CERAMIC CHIP	150PF	5%	50V (CX860)
R298	1-216-063-91	RES-CHIP	3.9K	5%	1/10W (CX870D)	C412	1-125-854-11	FILM	560PF	5%	50V (CX870D)
R299	1-216-075-00	METAL CHIP	12K	5%	1/10W (CX870D)	C414	1-125-854-11	FILM	560PF	5%	50V (CX870D)
R300	1-216-075-00	METAL CHIP	12K	5%	1/10W (CX860:AEP,UK/CX870D)	C415	1-137-256-11	MYLAR	0.00015uF	5%	50V (CX870D)
R301	1-216-073-00	METAL CHIP	10K	5%	1/10W	C416	1-163-255-11	CERAMIC CHIP	150PF	5%	50V (CX860)
R302	1-216-073-00	METAL CHIP	10K	5%	1/10W						
R306	1-216-073-00	METAL CHIP	10K	5%	1/10W (CX870D)	C417	1-137-256-11	MYLAR	0.00015uF	5%	50V (CX870D)
R307	1-216-295-11	SHORT	0 (CX860)			C418	1-128-846-11	ELECT	330uF	20%	10V (CX870D)
R310	1-216-295-11	SHORT	0 (CX860:US,CND)			C419	1-126-964-11	ELECT	10uF	20%	50V (CX860)
R310	1-216-009-91	RES-CHIP	22	5%	1/10W (CX860:AEP,UK/CX870D)	C419	1-128-200-11	ELECT	47uF	20%	63V (CX870D)
R313	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	C420	1-163-255-11	CERAMIC CHIP	150PF	5%	50V (CX860)
R314	1-216-089-11	RES-CHIP	47K	5%	1/10W						
R315	1-216-065-91	RES-CHIP	4.7K	5%	1/10W (CX860:AEP,UK/CX870D)						
R316	1-216-073-00	METAL CHIP	10K	5%	1/10W (CX860:AEP,UK/CX870D)	C421	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
R317	1-216-089-11	RES-CHIP	47K	5%	1/10W (CX860:AEP,UK/CX870D)	C422	1-137-619-21	FILM	1200PF	5%	50V (CX870D)
R318	1-216-073-00	METAL CHIP	10K	5%	1/10W (CX860:AEP,UK/CX870D)	C423	1-137-619-21	FILM	1200PF	5%	50V (CX870D)
R319	1-216-041-00	METAL CHIP	470	5%	1/10W (CX860:AEP,UK/CX870D)	C425	1-130-467-00	MYLAR	470PF	5%	50V (CX870D)
R320	1-216-295-11	SHORT	0			C426	1-130-467-00	MYLAR	470PF	5%	50V (CX870D)
R322	1-216-295-11	SHORT	0								

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Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
C428	1-136-850-11	MYLAR	0.1uF 5% 63V (CX870D)	C453	1-106-351-00	MYLAR	2200PF 5% 200V (CX870D)
C429	1-128-552-11	ELECT	47uF 20% 50V (CX870D)	C454	1-164-182-11	CERAMIC CHIP	0.0033uF 10% 50V (CX870D)
C430	1-104-664-11	ELECT	47uF 20% 16V (CX860)	C455	1-164-182-11	CERAMIC CHIP	0.0033uF 10% 50V (CX870D)
C431	1-104-664-11	ELECT	47uF 20% 16V (CX860)	C456	1-104-987-11	MYLAR	0.001uF 5% 50V (CX870D)
C432	1-128-552-11	ELECT	47uF 20% 50V (CX870D)	C457	1-104-987-11	MYLAR	0.001uF 5% 50V (CX870D)
C433	1-136-850-11	MYLAR	0.1uF 5% 63V (CX870D)	C458	1-163-251-11	CERAMIC CHIP	100PF 5% 50V (CX860:US,CND/CX870D)
C434	1-163-021-91	CERAMIC CHIP	0.01uF 10% 50V	C461	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
C435	1-163-021-91	CERAMIC CHIP	0.01uF 10% 50V	C462	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
C436	1-126-933-11	ELECT	100uF 20% 16V (CX860)	C464	1-163-251-11	CERAMIC CHIP	100PF 5% 50V (CX860:US,CND/CX870D)
C436	1-126-052-11	ELECT	100uF 20% 16V (CX870D)	C466	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
C437	1-126-933-11	ELECT	100uF 20% 16V (CX860)	C468	1-163-251-11	CERAMIC CHIP	100PF 5% 50V
C437	1-126-052-11	ELECT	100uF 20% 16V (CX870D)	C472	1-163-259-91	CERAMIC CHIP	220PF 5% 50V (CX860:AEP,UK)
C438	1-124-724-11	ELECT	47uF 20% 16V (CX870D)	C473	1-163-021-91	CERAMIC CHIP	0.01uF 10% 50V
C439	1-136-850-11	MYLAR	0.1uF 5% 63V (CX870D)	C474	1-104-664-11	ELECT	47uF 20% 16V
C440	1-124-724-11	ELECT	47uF 20% 16V (CX870D)	C475	1-104-664-11	ELECT	47uF 20% 16V
C441	1-136-850-11	MYLAR	0.1uF 5% 63V (CX870D)	< CONNECTOR >			
C442	1-126-965-11	ELECT	22uF 20% 50V (CX870D)	CN401	1-506-494-11	PIN, CONNECTOR 15P	
C443	1-126-965-11	ELECT	22uF 20% 50V (CX870D)	CN402	1-506-494-11	PIN, CONNECTOR 15P	
C444	1-124-724-11	ELECT	47uF 20% 16V (CX870D)	< DIODE >			
C444	1-126-965-11	ELECT	22uF 20% 50V (CX860:AEP,UK)	D401	8-719-988-61	DIODE 1SS355TE-17	
C445	1-126-965-11	ELECT	22uF 20% 50V (CX870D)	D402	8-719-988-61	DIODE 1SS355TE-17 (CX870D)	
C446	1-136-850-11	MYLAR	0.1uF 5% 63V (CX870D)	< FERRITE BEAD >			
C447	1-136-850-11	MYLAR	0.1uF 5% 63V (CX870D)	FB401	1-414-553-11	FERRITE	0UH
C448	1-104-987-11	MYLAR	0.001uF 5% 50V (CX870D)	FB402	1-414-553-11	FERRITE	0UH
C449	1-104-987-11	MYLAR	0.001uF 5% 50V (CX870D)	FB403	1-414-553-11	FERRITE	0UH (CX860:US,CND/CX870D)
C450	1-163-259-91	CERAMIC CHIP	220PF 5% 50V (CX870D)	FB404	1-414-553-11	FERRITE	0UH (CX860:US,CND/CX870D)
C451	1-130-477-00	MYLAR	0.0033uF 5% 50V (CX860)	FB405	1-414-553-11	FERRITE	0UH
C451	1-106-351-00	MYLAR	2200PF 5% 200V (CX870D)	FB406	1-414-553-11	FERRITE	0UH
C452	1-137-605-11	MYLAR	0.00022uF 5% 50V (CX870D)	FB407	1-414-553-11	FERRITE	0UH (CX870D)
C453	1-130-477-00	MYLAR	0.0033uF 5% 50V (CX860)	FB408	1-414-553-11	FERRITE	0UH (CX860:AEP,UK/CX870D)
				FB409	1-414-553-11	FERRITE	0UH (CX870D)
				FB410	1-414-553-11	FERRITE	0UH (CX870D)
				FB411	1-414-553-11	FERRITE	0UH (CX870D)
				FB412	1-414-553-11	FERRITE	0UH (CX870D)
				< IC >			
				IC401	8-759-425-23	IC BA4558F-E2 (OPTICAL)	(CX860)
				IC401	8-759-684-22	IC IC BA15532F-E2	(CX870D)
				IC402	8-749-017-31	IC IC GP1FA550TZ	(CX860)
				IC402	8-749-017-80	IC IC GP1FA551TZ	(CX870D)
				IC403	8-759-587-83	IC OPA2134UA/2K5	(CX870D)

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
		< JACK >					
J401	1-793-446-21	JACK, PIN 1P (COAXIAL)(CX860)		R416	1-216-025-11	RES-CHIP 100 5%	1/10W
J401	1-784-432-11	JACK, PIN 1P (COAXIAL)(CX870D)		R417	1-216-295-11	SHORT 0	
J402	1-793-484-11	JACK, PIN 2P (AUDIO IN)(CX860)		R418	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
J402	1-794-794-11	JACK, PIN 2P (AUDIO IN)(CX870D)		R419	1-208-806-11	RES-CHIP 10K 2%	1/10W
J403	1-793-484-11	JACK, PIN 2P (AUDIO OUT)(CX860:AEP,UK)		R420	1-208-806-11	RES-CHIP 10K 2%	1/10W
J404	1-794-793-11	JACK, PIN 4P (AUDIO OUT)(CX860:US,CND)		R421	1-216-021-00	METAL CHIP 68 5%	1/10W
J404	1-793-524-11	JACK, PIN 4P (AUDIO OUT)(CX870D)		R422	1-216-021-00	METAL CHIP 68 5%	1/10W (CX870D)
J405	1-794-792-11	JACK, PIN 6P (5.1CH OUTPUT)(CX870D)		R423	1-216-055-00	METAL CHIP 1.8K 5%	1/10W (CX870D)
J406	1-793-446-11	JACK, PIN 1P (WOOFER OUT) (CX860:AEP,UK)		R424	1-216-055-00	METAL CHIP 1.8K 5%	1/10W (CX870D)
		< JUMPER RESISTOR >		R425	1-216-033-00	METAL CHIP 220 5%	1/10W (CX860)
JR401	1-216-296-91	SHORT 0		R426	1-216-055-00	METAL CHIP 1.8K 5%	1/10W (CX870D)
JR402	1-216-295-11	SHORT 0		R427	1-216-055-00	METAL CHIP 1.8K 5%	1/10W (CX870D)
JR442	1-216-295-11	SHORT 0					
		< TRANSISTOR >		R428	1-216-295-11	SHORT 0 (CX870D)	
Q401	8-729-230-49	TRANSISTOR 2SC2712-YG (CX870D)		R431	1-216-295-11	SHORT 0 (CX870D)	
Q402	8-729-230-49	TRANSISTOR 2SC2712-YG		R432	1-216-049-11	RES-CHIP 1K 5%	1/10W
Q403	8-729-230-47	TRANSISTOR 2SA1162-YG.TE85L (CX870D)		R433	1-216-049-11	RES-CHIP 1K 5%	1/10W (CX870D)
Q404	8-729-422-26	TRANSISTOR 2SD601A-QRS-TX		R434	1-216-041-00	METAL CHIP 470 5%	1/10W
Q405	8-729-422-26	TRANSISTOR 2SD601A-QRS-TX (CX870D)		R435	1-216-041-00	METAL CHIP 470 5%	1/10W
Q406	8-729-046-97	TRANSISTOR 2SD1938(F)-T(TX).SO		R436	1-216-089-11	RES-CHIP 47K 5%	1/10W
Q407	8-729-046-97	TRANSISTOR 2SD1938(F)-T(TX).SO		R437	1-216-089-11	RES-CHIP 47K 5%	1/10W
Q408	8-729-046-97	TRANSISTOR 2SD1938(F)-T(TX).SO (CX870D)		R438	1-216-089-11	RES-CHIP 47K 5%	1/10W
Q409	8-729-046-97	TRANSISTOR 2SD1938(F)-T(TX).SO (CX860:AEP,UK/CX870D)		R439	1-216-089-11	RES-CHIP 47K 5%	1/10W (CX870D)
Q410	8-729-046-97	TRANSISTOR 2SD1938(F)-T(TX).SO (CX870D)		R443	1-216-061-00	METAL CHIP 3.3K 5%	1/10W (CX870D)
Q411	8-729-046-97	TRANSISTOR 2SD1938(F)-T(TX).SO (CX870D)		R444	1-216-065-91	RES-CHIP 4.7K 5%	1/10W
Q412	8-729-046-97	TRANSISTOR 2SD1938(F)-T(TX).SO (CX870D)		R445	1-216-065-91	RES-CHIP 4.7K 5%	1/10W (CX860:US,CND)
Q413	8-729-046-97	TRANSISTOR 2SD1938(F)-T(TX).SO (CX870D)		R446	1-216-065-91	RES-CHIP 4.7K 5%	1/10W (CX860:AEP,UK/CX870D)
Q414	8-729-046-97	TRANSISTOR 2SD1938(F)-T(TX).SO (CX870D)		R447	1-216-061-00	METAL CHIP 3.3K 5%	1/10W (CX860:AEP,UK/CX870D)
Q415	8-729-046-97	TRANSISTOR 2SD1938(F)-T(TX).SO (CX870D)		R448	1-216-097-11	RES-CHIP 100K 5%	1/10W
		< RESISTOR >		R449	1-216-097-11	RES-CHIP 100K 5%	1/10W (CX860:AEP,UK/CX870D)
R401	1-208-460-11	METAL CHIP 8.2K 0.5%	1/10W	R450	1-216-061-00	METAL CHIP 3.3K 5%	1/10W (CX870D)
R402	1-208-460-11	METAL CHIP 8.2K 0.5%	1/10W	R451	1-216-097-11	RES-CHIP 100K 5%	1/10W (CX870D)
R403	1-208-460-11	METAL CHIP 8.2K 0.5%	1/10W	R452	1-216-061-00	METAL CHIP 3.3K 5%	1/10W (CX870D)
R404	1-208-460-11	METAL CHIP 8.2K 0.5%	1/10W	R453	1-216-061-00	METAL CHIP 3.3K 5%	1/10W (CX870D)
R405	1-216-049-11	RES-CHIP 1K 5%	1/10W	R454	1-216-097-11	RES-CHIP 100K 5%	1/10W (CX860:AEP,UK/CX870D)
R406	1-208-806-11	RES-CHIP 10K 2%	1/10W	R455	1-216-061-00	METAL CHIP 3.3K 5%	1/10W (CX870D)
R407	1-208-806-11	RES-CHIP 10K 2%	1/10W				
R408	1-216-049-11	RES-CHIP 1K 5%	1/10W (CX860)	R456	1-216-041-00	METAL CHIP 470 5%	1/10W (CX870D)
R409	1-216-049-11	RES-CHIP 1K 5%	1/10W	R457	1-216-041-00	METAL CHIP 470 5%	1/10W (CX860:AEP,UK/CX870D)
R410	1-216-081-00	METAL CHIP 22K 5%	1/10W (CX870D)	R458	1-216-041-00	METAL CHIP 470 5%	1/10W (CX870D)
R411	1-216-073-00	METAL CHIP 10K 5%	1/10W (CX870D)	R459	1-216-105-91	RES-CHIP 220K 5%	1/10W
R412	1-216-049-11	RES-CHIP 1K 5%	1/10W (CX870D)	R460	1-216-041-00	METAL CHIP 470 5%	1/10W (CX870D)
R413	1-216-053-00	METAL CHIP 1.5K 5%	1/10W				
R414	1-216-053-00	METAL CHIP 1.5K 5%	1/10W				
R415	1-216-053-00	METAL CHIP 1.5K 5%	1/10W				

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Ref. No.	Part No.	Description			Remarks
R461	1-216-041-00	METAL CHIP	470	5%	1/10W (CX870D)
R462	1-216-105-91	RES-CHIP	220K	5%	1/10W
R463	1-216-041-00	METAL CHIP	470	5%	1/10W (CX860:US,CND/CX870D)
R464	1-216-041-00	METAL CHIP	470	5%	1/10W
R465	1-216-041-00	METAL CHIP	470	5%	1/10W (CX860:US,CND/CX870D)
R466	1-216-041-00	METAL CHIP	470	5%	1/10W
R467	1-216-041-00	METAL CHIP	470	5%	1/10W (CX870D)
R469	1-216-295-11	SHORT	0	(CX860:AEP,UK)	
R470	1-216-089-11	RES-CHIP	47K	5%	1/10W (CX870D)
R471	1-216-089-11	RES-CHIP	47K	5%	1/10W (CX870D)
R472	1-216-089-11	RES-CHIP	47K	5%	1/10W (CX870D)
R473	1-216-089-11	RES-CHIP	47K	5%	1/10W (CX870D)
R474	1-216-089-11	RES-CHIP	47K	5%	1/10W (CX860:AEP,UK/CX870D)
R475	1-216-089-11	RES-CHIP	47K	5%	1/10W (CX870D)
R487	1-216-041-00	METAL CHIP	470	5%	1/10W
R488	1-216-041-00	METAL CHIP	470	5%	1/10W
R489	1-216-041-00	METAL CHIP	470	5%	1/10W (CX870D)
R490	1-216-041-00	METAL CHIP	470	5%	1/10W (CX870D)
R495	1-216-295-11	SHORT	0		
		< RELAY >			
RY401	1-755-184-11	RELAY			
RY402	1-755-184-11	RELAY (CX870D)			
*	A-6065-604-A	CK-97 BOARD, COMPLETE (CX860:AEP,UK)	*****		
*	A-6065-615-A	CK-97 BOARD, COMPLETE (CX860:US,CND)	*****		
*	A-6065-628-A	CK-97 BOARD, COMPLETE (CX870D)	*****		
			(Ref.No.;2000Series)		
	3-064-172-01	HOLDER(CK-97), SENSOR			
	3-960-273-11	SPACER, TOP END			
		< CAPACITOR >			
C001	1-128-551-11	ELECT	22uF	20%	25V
C002	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C003	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C004	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C005	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C006	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C007	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C008	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C009	1-128-551-11	ELECT	22uF	20%	25V
C010	1-126-964-11	ELECT	10uF	20%	50V
C011	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C012	1-126-964-11	ELECT	10uF	20%	50V
C013	1-128-551-11	ELECT	22uF	20%	25V
C014	1-126-964-11	ELECT	10uF	20%	50V

Ref. No.	Part No.	Description	Remarks
< CONNECTOR >			
CN001	1-691-863-11	CONNECTOR, BOARD TO BOARD	
CN002	1-573-538-11	CONNECTOR, BOARD TO BOARD 8P	
* CN003	1-778-236-11	CONNECTOR, FFC/FPC 11P	
CN004	1-770-674-11	CONNECTOR, FFC/FPC 16P	
CN005	1-793-491-11	CONNECTOR, FFC/FPC 17P	
< DIODE >			
D001	8-719-069-54	DIODE UDZS-TE17-5.1B	
D003	8-719-056-85	DIODE UDZ-TE-17-8.2B	
D004	8-719-069-54	DIODE UDZS-TE17-5.1B	
D005	8-719-048-26	DIODE GL528V1	
< IC >			
IC001	8-759-277-68	IC LB1648	
IC002	8-759-277-68	IC LB1648	
IC003	8-759-691-05	IC BU4069UBF-E2	
< JUMPER RESISTOR >			
JR001	1-216-296-91	SHORT	0
JR002	1-216-296-91	SHORT	0
JR003	1-216-296-91	SHORT	0
JR004	1-216-296-91	SHORT	0
JR005	1-216-296-91	SHORT	0
JR006	1-216-296-91	SHORT	0
JR007	1-216-296-91	SHORT	0
JR008	1-216-296-91	SHORT	0
JR009	1-216-296-91	SHORT	0
JR010	1-216-296-91	SHORT	0
JR011	1-216-296-91	SHORT	0
JR012	1-216-296-91	SHORT	0
JR013	1-216-296-91	SHORT	0
JR015	1-216-296-91	SHORT	0
JR016	1-216-296-91	SHORT	0
JR017	1-216-296-91	SHORT	0
JR018	1-216-296-91	SHORT	0
JR019	1-216-296-91	SHORT	0
JR020	1-216-296-91	SHORT	0
JR021	1-216-296-91	SHORT	0
JR022	1-216-296-91	SHORT	0
JR023	1-216-296-91	SHORT	0
JR024	1-216-296-91	SHORT	0
JR025	1-216-296-91	SHORT	0
JR026	1-216-296-91	SHORT	0
JR027	1-216-296-91	SHORT	0
JR028	1-216-296-91	SHORT	0
JR029	1-216-296-91	SHORT	0
JR030	1-216-296-91	SHORT	0
JR031	1-216-296-91	SHORT	0
JR032	1-216-296-91	SHORT	0
JR034	1-216-296-91	SHORT	0
JR035	1-216-296-91	SHORT	0
JR036	1-216-296-91	SHORT	0
JR037	1-216-296-91	SHORT	0
JR038	1-216-296-91	SHORT	0
JR039	1-216-296-91	SHORT	0
JR042	1-216-296-91	SHORT	0
JR043	1-216-296-91	SHORT	0
JR044	1-216-296-91	SHORT	0

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
JR045	1-216-296-91	SHORT	0	Q006	8-729-026-49	TRANSISTOR	2SA1037AK-T146-R
JR046	1-216-296-91	SHORT	0	Q007	8-729-026-49	TRANSISTOR	2SA1037AK-T146-R
JR047	1-216-296-91	SHORT	0	Q008	8-729-026-49	TRANSISTOR	2SA1037AK-T146-R
JR048	1-216-296-91	SHORT	0	< RESISTOR >			
JR049	1-216-296-91	SHORT	0	R005	1-216-095-00	METAL CHIP	82K 5% 1/10W
JR050	1-216-296-91	SHORT	0	R006	1-216-095-00	METAL CHIP	82K 5% 1/10W
JR053	1-216-296-91	SHORT	0	R009	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
JR054	1-216-296-91	SHORT	0	R013	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
JR055	1-216-296-91	SHORT	0	R015	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
JR056	1-216-296-91	SHORT	0	R021	1-216-039-00	METAL CHIP	390 5% 1/10W
JR057	1-216-296-91	SHORT	0	R022	1-216-091-00	METAL CHIP	56K 5% 1/10W
JR058	1-216-296-91	SHORT	0	R023	1-216-093-91	RES-CHIP	68K 5% 1/10W
JR059	1-216-296-91	SHORT	0	R024	1-216-121-11	RES-CHIP	1M 5% 1/10W
JR060	1-216-296-91	SHORT	0	R025	1-216-093-91	RES-CHIP	68K 5% 1/10W
JR061	1-216-296-91	SHORT	0	R026	1-216-121-11	RES-CHIP	1M 5% 1/10W
JR062	1-216-296-91	SHORT	0	R027	1-216-093-91	RES-CHIP	68K 5% 1/10W
JR064	1-216-296-91	SHORT	0	R028	1-216-121-11	RES-CHIP	1M 5% 1/10W
JR065	1-216-296-91	SHORT	0	R030	1-216-049-11	RES-CHIP	1K 5% 1/10W
JR066	1-216-296-91	SHORT	0	R031	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
JR067	1-216-296-91	SHORT	0	R032	1-216-041-00	METAL CHIP	470 5% 1/10W
JR070	1-216-296-91	SHORT	0	R033	1-216-073-00	METAL CHIP	10K 5% 1/10W
JR071	1-216-296-91	SHORT	0	R034	1-216-099-00	METAL CHIP	120K 5% 1/10W
JR074	1-216-296-91	SHORT	0	R035	1-216-031-00	METAL CHIP	180 5% 1/10W
JR076	1-216-296-91	SHORT	0	R037	1-216-093-91	RES-CHIP	68K 5% 1/10W
JR079	1-216-296-91	SHORT	0	R040	1-216-047-91	RES-CHIP	820 5% 1/10W
JR080	1-216-296-91	SHORT	0	R041	1-216-043-91	RES-CHIP	560 5% 1/10W
JR081	1-216-296-91	SHORT	0	(CX860)			
JR083	1-216-296-91	SHORT	0	R041	1-216-037-00	METAL CHIP	330 5% 1/10W
JR086	1-216-296-91	SHORT	0	(CX870D)			
JR087	1-216-296-91	SHORT	0	R042	1-216-039-00	METAL CHIP	390 5% 1/10W
JR088	1-216-296-91	SHORT	0	(CX860)			
JR089	1-216-296-91	SHORT	0	R042	1-216-045-00	METAL CHIP	680 5% 1/10W
JR090	1-216-296-91	SHORT	0	(CX870D)			
JR091	1-216-296-91	SHORT	0	R043	1-216-043-91	RES-CHIP	560 5% 1/10W
JR092	1-216-296-91	SHORT	0	(CX860)			
JR095	1-216-296-91	SHORT	0	R043	1-216-037-00	METAL CHIP	330 5% 1/10W
JR096	1-216-296-91	SHORT	0	(CX870D)			
JR097	1-216-296-91	SHORT	0	R044	1-216-039-00	METAL CHIP	390 5% 1/10W
JR100	1-216-296-91	SHORT	0	(CX860)			
JR101	1-216-296-91	SHORT	0	R044	1-216-045-00	METAL CHIP	680 5% 1/10W
JR110	1-216-296-91	SHORT	0	(CX870D)			
JR111	1-216-296-91	SHORT	0	R045	1-216-089-11	RES-CHIP	47K 5% 1/10W
JR112	1-216-296-91	SHORT	0	R046	1-216-089-11	RES-CHIP	47K 5% 1/10W
JR113	1-216-296-91	SHORT	0	R047	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
JR114	1-216-296-91	SHORT	0	R048	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
JR116	1-216-296-91	SHORT	0	R049	1-216-035-00	METAL CHIP	270 5% 1/10W
JR117	1-216-296-91	SHORT	0	R050	1-216-041-00	METAL CHIP	470 5% 1/10W
< PHOTO INTERRUPTER >				R051	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
PH001	8-719-052-69	DIODE RPI-352		R052	1-216-152-11	RES-CHIP	12 5% 1/8W
< TRANSISTOR >				R053	1-216-152-11	RES-CHIP	12 5% 1/8W
Q001	8-729-043-84	TRANSISTOR	PT380F3	R054	1-216-152-11	RES-CHIP	12 5% 1/8W
Q002	8-729-120-28	TRANSISTOR	2SC1623-L5L6	R055	1-216-152-11	RES-CHIP	12 5% 1/8W
Q003	8-729-424-59	TRANSISTOR	UN2212	R056	1-216-049-11	RES-CHIP	1K 5% 1/10W
Q004	8-729-424-59	TRANSISTOR	UN2212	R057	1-216-049-11	RES-CHIP	1K 5% 1/10W
Q005	8-729-424-59	TRANSISTOR	UN2212	R058	1-216-043-91	RES-CHIP	560 5% 1/10W
				R059	1-216-065-91	RES-CHIP	4.7K 5% 1/10W

CS-57

CV-34

DA-29

DM-96

Ref. No.	Part No.	Description	Remarks
		CS-57 BOARD, COMPLETE ***** (Ref.No.:1000Series)	
		< CONNECTOR >	
CN261	1-794-833-11	CONNECTOR, FFC/FPC 5P	
CN262	1-573-835-11	CONNECTOR, BOARD TO BOARD 3P	
		< PHOTO INTERRUPTER >	
PH261	8-749-014-69	IC SPI-238-18	
PH262	8-749-014-69	IC SPI-238-18	
		< RESISTOR >	
R261	1-216-039-00	METAL CHIP 390 5% 1/10W	
R262	1-216-039-00	METAL CHIP 390 5% 1/10W	
*	A-6065-603-A	CV-34 BOARD, COMPLETE (CX860:AEP,UK) *****	
*	A-6065-614-A	CV-34 BOARD, COMPLETE (CX860:US,CND) *****	
*	A-6065-627-A	CV-34 BOARD, COMPLETE (CX870D) ***** (Ref.No.:1000Series)	
		< CAPACITOR >	
C501	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V	
C502	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V (CX860:US,CND/CX870D)	
		< CONNECTOR >	
CN501	1-691-047-41	HOUSING, CONNECTOR 15P	
		< DIODE >	
D503	8-719-988-61	DIODE 1SS355TE-17	
		< FERRITE BEAD >	
FB501	1-414-553-11	FERRITE 0UH	
FB502	1-414-553-11	FERRITE 0UH (CX860:US,CND/CX870D)	
FB503	1-414-553-11	FERRITE 0UH	
FB504	1-414-553-11	FERRITE 0UH	
FB505	1-414-553-11	FERRITE 0UH	
		< JACK >	
J501	1-694-484-21	TERMINAL, S (2P.V) (SVIDEO OUTPUT) (CX860:US,CND)	
J501	1-794-198-11	CONNECTOR, S TERMINAL (SVIDEO OUTPUT) (CX860:AEP,UK)	
J501	1-694-484-11	TERMINAL, S (2P.V) (SVIDEO OUTPUT) (CX870D)	
J502	1-793-445-11	JACK, PIN 3P (COMPONENT OUTPUT)(CX860)	
J502	1-793-445-21	JACK, PIN 3P (COMPONENT OUTPUT)(CX870D)	
J503	1-764-188-21	JACK (SMALL TYPE) (DIA. 3.5) (MEGA CONTROL)	
J504	1-764-188-21	JACK (SMALL TYPE) (DIA. 3.5) (S-LINK) (CX860:US,CND/CX870D)	
J505	1-793-475-21	JACK, PIN 2P (VIDEO OUTPUT) (CX860:US,CND)	
J505	1-785-867-31	JACK, PIN 1P (VIDEO OUTPUT)(CX860:AEP,UK)	
J505	1-793-475-11	JACK, PIN 2P (VIDEO OUTPUT)(CX870D)	

Ref. No.	Part No.	Description	Remarks
		< COIL >	
L501	1-414-930-21	INDUCTOR 2.2uH	
		< TRANSISTOR >	
Q501	8-729-046-97	TRANSISTOR 2SD1938(F)-T(TX).SO	
		< RESISTOR >	
R501	1-216-021-00	METAL CHIP 68 5% 1/10W (CX860:US,CND/CX870D)	
R502	1-216-021-00	METAL CHIP 68 5% 1/10W	
R503	1-216-021-00	METAL CHIP 68 5% 1/10W (CX860:US,CND/CX870D)	
R504	1-216-021-00	METAL CHIP 68 5% 1/10W	
R505	1-216-021-00	METAL CHIP 68 5% 1/10W (CX860:US,CND/CX870D)	
R506	1-216-021-00	METAL CHIP 68 5% 1/10W	
R507	1-216-021-00	METAL CHIP 68 5% 1/10W	
R508	1-216-021-00	METAL CHIP 68 5% 1/10W	
R509	1-216-021-00	METAL CHIP 68 5% 1/10W	
R510	1-216-065-91	RES-CHIP 4.7K 5% 1/10W	
R512	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R513	1-216-001-00	METAL CHIP 10 5% 1/10W	
R514	1-216-295-11	SHORT 0 (CX860:US,CND/CX870D)	
R515	1-216-295-11	SHORT 0	
R516	1-216-295-11	SHORT 0 (CX860:US,CND/CX870D)	
R517	1-216-295-11	SHORT 0	
R518	1-216-295-11	SHORT 0	
R519	1-216-295-11	SHORT 0 (CX860:US,CND/CX870D)	
R523	1-216-295-11	SHORT 0 (CX860:US,CND/CX870D)	
R524	1-216-049-11	RES-CHIP 1K 5% 1/10W (CX860:US,CND/CX870D)	
R525	1-216-295-11	SHORT 0	
R526	1-216-295-11	SHORT 0	

DA-29 BOARD, COMPLETE

(Ref.No.:1000Series)

< CONNECTOR >

CN161 1-794-832-21 CONNECTOR, FFC/FPC 4P

< PHOTO INTERRUPTER >

PH161 8-749-015-76 PHOTO INTERRUPTER SPI-235-19-S1

PH162 8-749-015-76 PHOTO INTERRUPTER SPI-235-19-S1

< RESISTOR >

R161 1-216-043-91 RES-CHIP 560 5% 1/10W

R162 1-216-043-91 RES-CHIP 560 5% 1/10W

DM-96 BOARD, COMPLETE

(Ref.No.:1000Series)

< CAPACITOR >

C191 1-164-004-11 CERAMIC CHIP 0.1uF 10% 25V

C192 1-164-004-11 CERAMIC CHIP 0.1uF 10% 25V

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
< CONNECTOR >							
CN191	1-794-784-21	CONNECTOR, FFC/FPC 6P		D906	8-719-988-61	DIODE 1SS355TE-17	
* CN192	1-779-072-11	CONNECTOR, FFC/FPC 4P		D907	8-719-988-61	DIODE 1SS355TE-17	
< JUMPER RESISTOR >				D908	8-719-071-15	DIODE HZM6.8ZWA1TL	
JR190	1-216-296-91	SHORT 0		D909	8-719-988-61	DIODE 1SS355TE-17	
				D910	8-719-988-61	DIODE 1SS355TE-17	
				D911	8-719-988-61	DIODE 1SS355TE-17	
				D915	8-719-071-15	DIODE HZM6.8ZWA1TL	
				D917	8-719-071-15	DIODE HZM6.8ZWA1TL	
				D918	8-719-071-15	DIODE HZM6.8ZWA1TL	
				D919	8-719-071-15	DIODE HZM6.8ZWA1TL	
				D920	8-719-071-15	DIODE HZM6.8ZWA1TL	
				D921	8-719-071-15	DIODE HZM6.8ZWA1TL	
				D922	8-719-071-15	DIODE HZM6.8ZWA1TL	
				D923	8-719-071-15	DIODE HZM6.8ZWA1TL	
				D924	8-719-071-15	DIODE HZM6.8ZWA1TL	
				D926	8-719-056-82	DIODE UDZ-TE-17-6.2B	
				D927	8-719-977-40	DIODE DTZ13B	
				D929	8-719-056-82	DIODE UDZ-TE-17-6.2B	
				D930	8-719-977-40	DIODE DTZ13B	
				D931	8-719-071-15	DIODE HZM6.8ZWA1TL	
				< FERRITE BEAD >			
				FB901	1-414-553-11	FERRITE 0UH	
				FB902	1-414-553-11	FERRITE 0UH	
				FB903	1-414-553-11	FERRITE 0UH	
				FB904	1-414-553-11	FERRITE 0UH	
				FB905	1-414-553-11	FERRITE 0UH	
				FB906	1-414-553-11	FERRITE 0UH	
				FB907	1-414-553-11	FERRITE 0UH	
				FB908	1-414-553-11	FERRITE 0UH	
				FB909	1-414-553-11	FERRITE 0UH	
				FB910	1-414-553-11	FERRITE 0UH	
				FB911	1-414-553-11	FERRITE 0UH	
				FB912	1-414-553-11	FERRITE 0UH	
				FB913	1-414-553-11	FERRITE 0UH	
				FB914	1-414-553-11	FERRITE 0UH	
				FB915	1-414-553-11	FERRITE 0UH	
				FB916	1-414-553-11	FERRITE 0UH	
				FB917	1-414-553-11	FERRITE 0UH	
				FB918	1-414-553-11	FERRITE 0UH	
				< IC >			
				IC901	8-759-663-94	IC LA7106M-TLM	
				IC902	8-759-446-66	IC MM1113XFBE	
				IC903	8-759-567-33	IC MM1225XFBE	
				< COIL >			
				L904	1-412-064-11	INDUCTOR 100uH	
				< TRANSISTOR >			
				Q901	8-729-421-19	TRANSISTOR UN2213	
				Q902	8-729-422-27	TRANSISTOR 2SD601A-Q	
				Q903	8-729-424-08	TRANSISTOR UN2111	
				Q906	8-729-421-19	TRANSISTOR UN2213	
				Q907	8-729-424-08	TRANSISTOR UN2111	
				Q908	8-729-421-22	TRANSISTOR UN2211	
				Q909	8-729-421-19	TRANSISTOR UN2213	
				Q910	8-729-424-08	TRANSISTOR UN2111	
				Q911	8-729-421-19	TRANSISTOR UN2213	
				Q912	8-729-422-27	TRANSISTOR 2SD601A-Q	

Ref. No.	Part No.	Description	Remarks			
Q913	8-729-422-27	TRANSISTOR	2SD601A-Q			
Q914	8-729-422-27	TRANSISTOR	2SD601A-Q			
Q915	8-729-422-27	TRANSISTOR	2SD601A-Q			
Q916	8-729-422-27	TRANSISTOR	2SD601A-Q			
Q917	8-729-421-19	TRANSISTOR	UN2213			
Q918	8-729-422-27	TRANSISTOR	2SD601A-Q			
< RESISTOR >						
R902	1-216-089-11	RES-CHIP	47K	5%	1/10W	
R904	1-216-089-11	RES-CHIP	47K	5%	1/10W	
R906	1-216-089-11	RES-CHIP	47K	5%	1/10W	
R907	1-216-089-11	RES-CHIP	47K	5%	1/10W	
R908	1-216-105-91	RES-CHIP	220K	5%	1/10W	
R909	1-216-037-00	METAL CHIP	330	5%	1/10W	
R910	1-216-037-00	METAL CHIP	330	5%	1/10W	
R911	1-216-037-00	METAL CHIP	330	5%	1/10W	
R912	1-216-037-00	METAL CHIP	330	5%	1/10W	
R914	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R915	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R916	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R917	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R918	1-216-021-00	METAL CHIP	68	5%	1/10W	
R920	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R921	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R922	1-216-021-00	METAL CHIP	68	5%	1/10W	
R923	1-216-041-00	METAL CHIP	470	5%	1/10W	
R924	1-216-041-00	METAL CHIP	470	5%	1/10W	
R925	1-216-041-00	METAL CHIP	470	5%	1/10W	
R926	1-216-041-00	METAL CHIP	470	5%	1/10W	
R927	1-216-021-00	METAL CHIP	68	5%	1/10W	
R928	1-216-021-00	METAL CHIP	68	5%	1/10W	
R929	1-216-021-00	METAL CHIP	68	5%	1/10W	
R930	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	
R931	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	
R932	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	
R933	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	
R934	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	
R938	1-216-025-11	RES-CHIP	100	5%	1/10W	
R939	1-216-017-91	RES-CHIP	47	5%	1/10W	
R940	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	
R944	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R950	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R951	1-216-081-00	METAL CHIP	22K	5%	1/10W	
< RELAY >						
RY901	1-755-184-11	RELAY				
RY902	1-755-184-11	RELAY				
RY903	1-755-184-11	RELAY				
RY904	1-755-184-11	RELAY				
RY905	1-755-184-11	RELAY				
RY906	1-755-184-11	RELAY				
* A-6065-608-A FL-115 BOARD, COMPLETE ***** (Ref.No.;2000Series)						
< CAPACITOR >						
C401	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V	
C402	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V	

Ref. No.	Part No.	Description	Remarks			
< CONNECTOR >						
CN403	1-794-785-11	CONNECTOR, FFC/FPC 15P				
CN404	1-785-730-21	CONNECTOR, FFC/FPC 9P				
CN405	1-794-786-11	CONNECTOR, FFC/FPC 3P				
< DIODE >						
D401	8-719-081-68	DIODE SLI-343DCT32				
D402	8-719-081-68	DIODE SLI-343DCT32				
D403	8-719-081-68	DIODE SLI-343DCT32				
D404	8-719-056-06	DIODE SLR-342DC3F				
D405	8-719-056-07	DIODE SLR-342MC3F				
D406	8-719-056-06	DIODE SLR-342DC3F				
< JUMPER RESISTOR >						
JR401	1-216-296-91	SHORT	0			
JR451	1-216-296-91	SHORT	0			
JR452	1-216-296-91	SHORT	0			
JR455	1-216-296-91	SHORT	0			
JR457	1-216-296-91	SHORT	0			
JR459	1-216-296-91	SHORT	0			
JR465	1-216-296-91	SHORT	0			
< RESISTOR >						
R401	1-216-044-00	METAL CHIP	620	5%	1/10W	
R402	1-216-044-00	METAL CHIP	620	5%	1/10W	
R403	1-216-044-00	METAL CHIP	620	5%	1/10W	
R404	1-216-037-00	METAL CHIP	330	5%	1/10W	
R405	1-216-037-00	METAL CHIP	330	5%	1/10W	
R406	1-216-040-00	RES-CHIP	430	5%	1/10W	
R407	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R408	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R409	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R410	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R411	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R412	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	
R413	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R414	1-216-077-91	RES-CHIP	15K	5%	1/10W	
R415	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R416	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R417	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R418	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R419	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R420	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	
R421	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R422	1-216-077-91	RES-CHIP	15K	5%	1/10W	
R423	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R424	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
R425	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R426	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R427	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	
R428	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R429	1-216-077-91	RES-CHIP	15K	5%	1/10W	
< SWITCH >						
S401	1-475-235-21	ENCODER, ROTARY (PREV/NEXT)				
S403	1-771-349-21	SWITCH, KEYBOARD (STOP)				
S404	1-771-349-21	SWITCH, KEYBOARD (PAUSE)				
S405	1-771-349-21	SWITCH, KEYBOARD (JOG)				
S406	1-771-349-21	SWITCH, KEYBOARD (LOAD)				

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
S407	1-771-349-21	SWITCH, KEYBOARD (REPEAT)		C139	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
S408	1-771-349-21	SWITCH, KEYBOARD (TIME/TEXT)		C140	1-163-259-91	CERAMIC CHIP 220PF 5%	50V
S409	1-771-349-21	SWITCH, KEYBOARD (SHUFFLE)		C141	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V
S410	1-771-349-21	SWITCH, KEYBOARD (1/ALL DISCS)		C142	1-163-259-91	CERAMIC CHIP 220PF 5%	50V
S411	1-771-349-21	SWITCH, KEYBOARD (TITLE)		C143	1-163-259-91	CERAMIC CHIP 220PF 5%	50V
S412	1-771-349-21	SWITCH, KEYBOARD (DISPLAY)		< CONNECTOR >			
S413	1-771-349-21	SWITCH, KEYBOARD (DVD MENU)		CN101	1-794-236-11	CONNECTOR, FFC/FPC 15P	
S414	1-771-349-21	SWITCH, KEYBOARD (RETURN)		CN102	1-794-835-21	CONNECTOR, FFC/FPC	
S415	1-771-349-21	SWITCH, KEYBOARD (OPEN/CLOSE)		CN103	1-794-836-11	PIN, CONNECTOR 2P	(CX870D)
S416	1-771-349-21	SWITCH, KEYBOARD (PLAY)		< DIODE >			
S417	1-771-349-21	SWITCH, KEYBOARD (MEGA CONTROL)		D101	8-719-056-06	DIODE SLR-342DC3F	
S418	1-771-349-21	SWITCH, KEYBOARD (EASY PLAY)		D102	8-719-056-06	DIODE SLR-342DC3F	
S419	1-771-349-21	SWITCH, KEYBOARD (TURN OVER)		D104	8-719-041-97	DIODE MA113-TX	
S420	1-771-349-21	SWITCH, KEYBOARD (DISC CHANGE)		D105	8-719-041-97	DIODE MA113-TX	
S421	1-771-349-21	SWITCH, KEYBOARD (DIRECT SEARCH)		D107	8-719-914-47	DIODE DAN202K	(CX860:US,CND/CX870D)
				D108	8-719-018-12	DIODE MA8330	
*	A-6065-599-A	FR-173 BOARD, COMPLETE (CX860:AEP,UK)	*****	D109	8-719-422-67	DIODE MA8062-H	
*	A-6065-610-A	FR-173 BOARD, COMPLETE (CX860:US,CND)	*****	D111	8-719-067-59	DIODE MAZ9120D0LS0-TX/L	
*	A-6065-623-A	FR-173 BOARD, COMPLETE (CX870D)	*****	D112	8-719-067-59	DIODE MAZ9120D0LS0-TX/L	
				D113	8-719-067-59	DIODE MAZ9120D0LS0-TX/L	
				D116	8-719-067-82	DIODE SML-020MLTT86	
				< FERRITE BEAD >			
				FB101	1-414-553-11	FERRITE 0UH	
				FB102	1-414-553-11	FERRITE 0UH	
				FB103	1-469-324-21	FERRITE 0UH	
				< IC >			
				IC101	8-749-011-22	IC GP1U27X (■)	
				IC102	8-759-525-43	IC TC74HCT08AF(EL)	
				IC103	8-759-366-45	IC NJU3713G(Te2)	
				IC104	8-759-144-73	IC uPC393G2-E2 (CX860:US,CND/CX870D)	
				IC105	8-759-326-78	IC PST9140NL	
				IC106	8-759-695-71	IC M38B57M6-159FP	
				IC107	8-759-593-18	IC M35501FP-T2	
				< JACK >			
				J101	1-573-034-11	CONNECTOR,MULTIPLE (SMALL TYPE)	(KEY BOARD)
				< COIL >			
				L101	1-412-533-21	INDUCTOR 47uH	
				< FLUORESCENT INDICATOR >			
				ND101	1-517-834-21	INDICATOR TUBE, FLUORESCENT	
				< TRANSISTOR >			
				Q101	8-729-808-01	TRANSISTOR 2SD1622-S	
				Q102	8-729-808-01	TRANSISTOR 2SD1622-S	
				Q103	8-729-903-46	TRANSISTOR 2SB1132-P	
				Q104	1-801-806-11	TRANSISTOR DTC144EKA-T146	
				Q105	8-729-804-41	TRANSISTOR 2SB1122-S	
C101	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V				
C102	1-126-395-11	ELECT 22uF 20%	16V				
C103	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V				
C104	1-126-395-11	ELECT 22uF 20%	16V				
C105	1-128-405-11	ELECT CHIP 22uF 20%	50V				
C106	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V				
C107	1-137-150-11	FILM 0.01uF 5%	100V				
C108	1-126-204-11	ELECT CHIP 47uF 20%	16V				
C109	1-163-021-91	CERAMIC CHIP 0.01uF 10%	50V				
C110	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V				
C111	1-163-021-91	CERAMIC CHIP 0.01uF 10%	50V				
				(CX860:US,CND/CX870D)			
C112	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V				
C113	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V				
C114	1-137-672-21	ELECT(BLOCK) 47uF 20%	50V				
C116	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V				
				(CX860:US,CND/CX870D)			
C117	1-128-405-11	ELECT CHIP 22uF 20%	50V				
C118	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V				
C119	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V				
C120	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V				
C121	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V				
C122	1-163-021-91	CERAMIC CHIP 0.01uF 10%	50V				
C123	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V				
C125	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V				
C134	1-163-259-91	CERAMIC CHIP 220PF 5%	50V				
C135	1-163-259-91	CERAMIC CHIP 220PF 5%	50V				

Ref. No.	Part No.	Description	Remarks			Ref. No.	Part No.	Description	Remarks		
Q106	8-729-424-02	TRANSISTOR	2SB709A-QR			R151	1-216-025-11	RES-CHIP	100	5%	1/10W
			(CX860:US,CND/CX870D)			R154	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
Q107	8-729-424-18	TRANSISTOR	UN2113-TX			R155	1-216-295-11	SHORT	0		
			(CX860:US,CND/CX870D)			R156	1-216-025-11	RES-CHIP	100	5%	1/10W
Q108	8-729-421-22	TRANSISTOR	UN2211			R157	1-216-025-11	RES-CHIP	100	5%	1/10W
Q110	8-729-808-01	TRANSISTOR	2SD1622-S								
Q112	1-801-806-11	TRANSISTOR	DTC144EKA-T146			R158	1-216-025-11	RES-CHIP	100	5%	1/10W
						R159	1-216-025-11	RES-CHIP	100	5%	1/10W
Q113	1-801-806-11	TRANSISTOR	DTC144EKA-T146			R160	1-216-073-00	METAL CHIP	10K	5%	1/10W
		< RESISTOR >				R161	1-216-073-00	METAL CHIP	10K	5%	1/10W
						R162	1-216-025-11	RES-CHIP	100	5%	1/10W
R102	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	R165	1-216-097-11	RES-CHIP	100K	5%	1/10W
R103	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	R166	1-216-073-00	METAL CHIP	10K	5%	1/10W
R104	1-216-029-00	METAL CHIP	150	5%	1/10W	R167	1-216-073-00	METAL CHIP	10K	5%	1/10W
					(CX870D)	R169	1-216-073-00	METAL CHIP	10K	5%	1/10W
R105	1-216-025-11	RES-CHIP	100	5%	1/10W	R170	1-216-031-00	METAL CHIP	180	5%	1/10W
R106	1-216-089-11	RES-CHIP	47K	5%	1/10W						
R107	1-216-037-00	METAL CHIP	330	5%	1/10W	R171	1-216-049-11	RES-CHIP	1K	5%	1/10W
R109	1-216-057-00	METAL CHIP	2.2K	5%	1/10W						(CX870D)
R110	1-216-073-00	METAL CHIP	10K	5%	1/10W	R173	1-216-049-11	RES-CHIP	1K	5%	1/10W
R112	1-216-037-00	METAL CHIP	330	5%	1/10W	R176	1-216-093-91	RES-CHIP	68K	5%	1/10W
R113	1-216-025-11	RES-CHIP	100	5%	1/10W	R177	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
						R178	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R114	1-216-025-11	RES-CHIP	100	5%	1/10W	R179	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R115	1-216-073-00	METAL CHIP	10K	5%	1/10W	R180	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R116	1-216-081-00	METAL CHIP	22K	5%	1/10W	R181	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
					(CX860:US,CND/CX870D)	R182	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R117	1-216-081-00	METAL CHIP	22K	5%	1/10W	R183	1-216-077-91	RES-CHIP	15K	5%	1/10W
					(CX860:US,CND/CX870D)						
R118	1-216-073-00	METAL CHIP	10K	5%	1/10W	R184	1-216-091-00	METAL CHIP	56K	5%	1/10W
					(CX860:US,CND/CX870D)	R185	1-216-093-91	RES-CHIP	68K	5%	1/10W
						R186	1-216-093-91	RES-CHIP	68K	5%	1/10W
R119	1-216-049-11	RES-CHIP	1K	5%	1/10W	R187	1-216-093-91	RES-CHIP	68K	5%	1/10W
					(CX860:US,CND/CX870D)	R188	1-216-093-91	RES-CHIP	68K	5%	1/10W
R120	1-216-063-91	RES-CHIP	3.9K	5%	1/10W						
R123	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	R189	1-216-093-91	RES-CHIP	68K	5%	1/10W
					(CX860:US,CND/CX870D)	R190	1-216-093-91	RES-CHIP	68K	5%	1/10W
R124	1-216-073-00	METAL CHIP	10K	5%	1/10W	R191	1-216-093-91	RES-CHIP	68K	5%	1/10W
R125	1-216-025-11	RES-CHIP	100	5%	1/10W	R192	1-216-093-91	RES-CHIP	68K	5%	1/10W
						R193	1-216-093-91	RES-CHIP	68K	5%	1/10W
R126	1-216-057-00	METAL CHIP	2.2K	5%	1/10W						
R127	1-216-073-00	METAL CHIP	10K	5%	1/10W	R194	1-216-093-91	RES-CHIP	68K	5%	1/10W
R128	1-216-025-11	RES-CHIP	100	5%	1/10W	R195	1-216-093-91	RES-CHIP	68K	5%	1/10W
R129	1-216-025-11	RES-CHIP	100	5%	1/10W	R196	1-216-093-91	RES-CHIP	68K	5%	1/10W
R130	1-216-049-11	RES-CHIP	1K	5%	1/10W	R197	1-216-025-11	RES-CHIP	100	5%	1/10W
						R198	1-216-025-11	RES-CHIP	100	5%	1/10W
R131	1-216-065-91	RES-CHIP	4.7K	5%	1/10W						
R134	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	R199	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R135	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	R200	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R136	1-216-073-00	METAL CHIP	10K	5%	1/10W	R201	1-216-295-11	SHORT	0		
R137	1-216-073-00	METAL CHIP	10K	5%	1/10W	R209	1-216-081-00	METAL CHIP	22K	5%	1/10W
						R210	1-216-037-00	METAL CHIP	330	5%	1/10W
R138	1-216-073-00	METAL CHIP	10K	5%	1/10W						
R139	1-216-073-00	METAL CHIP	10K	5%	1/10W	R211	1-216-033-00	METAL CHIP	220	5%	1/10W
R141	1-216-073-00	METAL CHIP	10K	5%	1/10W						
R143	1-216-295-11	SHORT	0								
R144	1-216-295-11	SHORT	0								
R145	1-216-295-11	SHORT	0								
R146	1-216-295-11	SHORT	0								
R148	1-216-025-11	RES-CHIP	100	5%	1/10W	S101	1-771-349-21	SWITCH, KEYBOARD (VIRTUAL3D SURROUND)			
R149	1-216-097-11	RES-CHIP	100K	5%	1/10W	S102	1-771-349-21	SWITCH, KEYBOARD (DVE)			
R150	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	S103	1-771-349-21	SWITCH, KEYBOARD (FOLDER A)			
						S104	1-771-349-21	SWITCH, KEYBOARD (FOLDER B)			
						S105	1-771-349-21	SWITCH, KEYBOARD (FOLDER C)			
						S106	1-771-349-21	SWITCH, KEYBOARD (FOLDER D)			
						S107	1-771-349-21	SWITCH, KEYBOARD (FOLDER ALL)			
						S108	1-771-349-21	SWITCH, KEYBOARD (FOLDER DVD)			
						S109	1-771-349-21	SWITCH, KEYBOARD (FOLDER CD)			

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LC-70

LE-30

LS-55

LT-37

LT-38

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Ref. No.	Part No.	Description	Remarks
		< TRANSFORMER >	
T101	1-433-840-11	TRANSFORMER, DC-DC CONVERTER	
		< THERMISTOR >	
TH001	1-533-817-21	THERMISTOR	
		< VIBRATOR >	
X101	1-577-358-21	VIBRATOR, CERAMIC (4MHz)	
LC-70 BOARD, COMPLETE			

(Ref.No.;1000Series)			
		< CAPACITOR >	
C201	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C202	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C203	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C204	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
		< CONNECTOR >	
CN201	1-564-014-11	PIN, CONNECTOR 4P	
LE-30 BOARD, COMPLETE (CX870D)			

(Ref.No.;2000Series)			
		< CONNECTOR >	
CN301	1-794-837-11	PIN, CONNECTOR (PC BOARD) 2P	
		< DIODE >	
D301	8-719-076-64	DIODE LNG997CKB0S0 (DOLBY)	
A-6065-616-A LS-55 BOARD, COMPLETE			

(Ref.No.;1000Series)			
		< CONNECTOR >	
CN221	1-506-487-11	PIN, CONNECTOR 8P	
CN222	1-573-835-11	CONNECTOR, BOARD TO BOARD 3P	
CN223	1-794-833-11	CONNECTOR, FFC/FPC 5P	
		< JUMPER RESISTOR >	
JR221	1-216-296-91	SHORT 0	
JR222	1-216-296-91	SHORT 0	
		< PHOTO INTERRUPTER >	
PH221	8-749-014-69	IC SPI-238-18	
PH222	8-749-014-69	IC SPI-238-18	
		< RESISTOR >	
R221	1-216-039-00	METAL CHIP 390 5% 1/10W	
R222	1-216-039-00	METAL CHIP 390 5% 1/10W	

Ref. No.	Part No.	Description	Remarks
		LT-37 BOARD, COMPLETE	

(Ref.No.;1000Series)			
		< CONNECTOR >	
CN281	1-573-817-11	CONNECTOR, BOARD TO BOARD 3P	
		< DIODE >	
D281	8-719-081-87	DIODE SLA-360MT3F (CX860)	
D281	8-719-076-64	DIODE LNG997CKB0S0 (CX870D)	
D282	8-719-069-59	DIODE UDZS-TE17-8.2B (CX870D)	
LT-38 BOARD, COMPLETE			

(Ref.No.;1000Series)			
		< CONNECTOR >	
CN241	1-573-817-11	CONNECTOR, BOARD TO BOARD 3P	
		< DIODE >	
D241	8-719-081-87	DIODE SLA-360MT3F (CX860)	
D241	8-719-076-64	DIODE LNG997CKB0S0 (CX870D)	
D242	8-719-056-85	DIODE UDZ-TE-17-8.2B (CX870D)	
* A-6065-600-A MB-94 BOARD, COMPLETE (CX860:AEP,UK)			

* A-6065-611-A MB-94 BOARD, COMPLETE (CX860:US,CND)			

* A-6065-624-A MB-94 BOARD, COMPLETE (CX870D)			

(Ref.No.;1000Series)			
		< CAPACITOR >	
C101	1-162-919-11	CERAMIC CHIP 22PF 5% 50V	
C102	1-162-919-11	CERAMIC CHIP 22PF 5% 50V	
C103	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C104	1-126-209-11	ELECT CHIP 100uF 20% 4V	
C105	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C106	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C107	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C108	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C109	1-162-918-11	CERAMIC CHIP 18PF 5% 50V	
C110	1-162-916-11	CERAMIC CHIP 12PF 5% 50V	
C111	1-126-209-11	ELECT CHIP 100uF 20% 4V	
(CX860:US,CND)			
C112	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C113	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C114	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C115	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C116	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C117	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C118	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C119	1-162-915-11	CERAMIC CHIP 10PF 0.5PF 50V	
C120	1-126-206-11	ELECT CHIP 100uF 20% 6.3V	
(CX860:AEP,UK/CX870D)			

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Ref. No.	Part No.	Description	Remarks			Ref. No.	Part No.	Description	Remarks		
C121	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C430	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
			(CX860:AEP,UK/CX870D)			C431	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C122	1-126-209-11	ELECT CHIP	100uF	20%	4V	C433	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
			(CX860:AEP,UK/CX870D)			C434	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C301	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V	C435	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C302	1-126-209-11	ELECT CHIP	100uF	20%	4V						
C303	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C436	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
						C437	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C304	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C438	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C305	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	C439	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C306	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C440	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C307	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V						
C308	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C441	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
						C442	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C309	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C443	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C310	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C444	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C312	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C445	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C313	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V						
C314	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C446	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
						C447	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C315	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	C448	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C316	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C449	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C317	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C450	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C318	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V						
C319	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	C451	1-126-204-11	ELECT CHIP	47uF	20%	16V
						C452	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C320	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	C453	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C321	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C454	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C322	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C455	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C324	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V						
C325	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C456	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
						C457	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C326	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C458	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C327	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C459	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C328	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C460	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C329	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V						
C330	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C462	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
						C463	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C331	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V	C465	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C332	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C501	1-124-779-00	ELECT CHIP	10uF	20%	16V
C401	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	C502	1-124-779-00	ELECT CHIP	10uF	20%	16V
C402	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V						
C403	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	C503	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
						C504	1-124-779-00	ELECT CHIP	10uF	20%	16V
C405	1-126-204-11	ELECT CHIP	47uF	20%	16V	C505	1-125-822-11	TANTALUM	10uF	20%	10V
C409	1-164-315-11	CERAMIC CHIP	470PF	5%	50V	C506	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C410	1-162-921-11	CERAMIC CHIP	33PF	5%	50V	C507	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C411	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V						
C412	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V	C508	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
						C509	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C413	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	C510	1-124-779-00	ELECT CHIP	10uF	20%	16V
C414	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	C511	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C415	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	C512	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C416	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V						
C417	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V	C513	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
						C514	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C418	1-162-921-11	CERAMIC CHIP	33PF	5%	50V	C515	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C419	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V	C516	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C420	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V	C517	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C422	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V						
C424	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V	C518	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
						C519	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C425	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V	C520	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C426	1-164-315-11	CERAMIC CHIP	470PF	5%	50V	C521	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C427	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V	C522	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C428	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V						
C429	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	C523	1-125-822-11	TANTALUM	10uF	20%	10V
						C524	1-126-204-11	ELECT CHIP	47uF	20%	16V
						C525	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
						C528	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
						C529	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
C530	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C719	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C531	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V				(CX870D)
C532	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C720	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C533	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V				(CX870D)
C534	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C721	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
							(CX870D)
C535	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C722	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C536	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V				(CX870D)
C537	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C723	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C538	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V				(CX870D)
C539	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V				
C540	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V	C801	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C541	1-124-779-00	ELECT CHIP	10uF 20% 16V	C802	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C542	1-126-193-11	ELECT	1uF 20% 50V	C803	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C601	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C804	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
			(CX870D)	C805	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C602	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V				
			(CX870D)	C806	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C603	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C807	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
			(CX870D)	C808	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
C604	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C809	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
			(CX870D)			< CONNECTOR >	
C701	1-126-209-11	ELECT CHIP	100uF 20% 4V	* CN102	1-764-250-11	PIN, CONNECTOR (PC BOARD) 4P	
			(CX870D)	CN402	1-779-993-11	PIN, CONNECTOR (PWB) 5P	
C702	1-126-209-11	ELECT CHIP	100uF 20% 4V	CN404	1-794-425-11	CONNECTOR, FCC/FPC 20P	
			(CX870D)	CN405	1-794-424-11	CONNECTOR, FCC/FPC 16P	
C703	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	CN502	1-794-352-21	CONNECTOR, BOARD TO BOARD 28P	
			(CX870D)				
C704	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	CN702	1-794-352-21	CONNECTOR, BOARD TO BOARD 28P	
			(CX870D)	CN801	1-779-936-11	CONNECTOR, FFC/FPC 18P	
C705	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	CN802	1-770-700-11	CONNECTOR, FFC/FPC 17P	
			(CX870D)			< DIODE >	
C706	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V				
			(CX870D)	D101	8-719-071-34	DIODE RB521S-30-TE61	
C707	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V			< FERRITE BEAD >	
			(CX870D)				
C708	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	FB102	1-414-226-21	INDUCTOR	0UH
			(CX870D)	FB103	1-414-226-21	INDUCTOR	0UH (CX870D)
C709	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	FB104	1-414-226-21	INDUCTOR	0UH
			(CX870D)	FB105	1-414-226-21	INDUCTOR	0UH
C710	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	FB106	1-414-226-21	INDUCTOR	0UH (CX870D)
			(CX870D)				
C711	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	FB107	1-414-226-21	INDUCTOR	0UH
			(CX870D)	FB109	1-414-226-21	INDUCTOR	0UH
C712	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	FB110	1-414-226-21	INDUCTOR	0UH
			(CX870D)	FB111	1-414-226-21	INDUCTOR	0UH
C713	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	FB112	1-414-226-21	INDUCTOR	0UH
			(CX870D)				
C714	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	FB501	1-469-324-21	FERRITE	0UH
			(CX870D)	FB502	1-469-324-21	FERRITE	0UH
C715	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	FB503	1-469-324-21	FERRITE	0UH
			(CX870D)	FB504	1-469-324-21	FERRITE	0UH
C716	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	FB505	1-469-324-21	FERRITE	0UH
			(CX870D)				
C717	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	FB506	1-469-324-21	FERRITE	0UH
			(CX870D)	FB507	1-469-324-21	FERRITE	0UH
C718	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	FB509	1-414-226-21	INDUCTOR	0UH (CX870D)
			(CX870D)	FB701	1-414-226-21	INDUCTOR	0UH (CX870D)
				FB702	1-414-226-21	INDUCTOR	0UH (CX870D)
				FB810	1-469-787-11	FERRITE	0UH
				FB814	1-469-787-11	FERRITE	0UH
				FB815	1-469-787-11	FERRITE	0UH
				FB816	1-469-787-11	FERRITE	0UH
				FB817	1-469-787-11	FERRITE	0UH

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Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
FB818	1-469-787-11	FERRITE	OUH	IC802	8-759-693-11	IC K9F6408U0A-TCB0T	
FB819	1-469-787-11	FERRITE	OUH	IC803	8-759-670-51	IC CXD9568R-TBM	
FB820	1-469-787-11	FERRITE	OUH			< RESISTOR >	
FB821	1-469-787-11	FERRITE	OUH				
FB822	1-469-787-11	FERRITE	OUH				
				R002	1-216-801-11	METAL CHIP	22 5% 1/16W
FB823	1-469-787-11	FERRITE	OUH	R009	1-216-821-11	METAL CHIP	1K 5% 1/16W
FB824	1-469-787-11	FERRITE	OUH	R014	1-216-805-11	METAL CHIP	47 5% 1/16W
FB825	1-469-787-11	FERRITE	OUH	R015	1-216-809-11	METAL CHIP	100 5% 1/16W
FB828	1-469-787-11	FERRITE	OUH	R016	1-216-821-11	METAL CHIP	1K 5% 1/16W
FB829	1-469-787-11	FERRITE	OUH				
				R017	1-216-821-11	METAL CHIP	1K 5% 1/16W
FB830	1-469-787-11	FERRITE	OUH	R019	1-216-817-11	METAL CHIP	470 5% 1/16W
FB831	1-469-787-11	FERRITE	OUH	R101	1-216-833-11	METAL CHIP	10K 5% 1/16W
FB832	1-469-787-11	FERRITE	OUH	R102	1-216-833-11	METAL CHIP	10K 5% 1/16W
				R103	1-216-833-11	METAL CHIP	10K 5% 1/16W
		< FILTER >					
FL101	1-234-177-21	FILTER, CHIP EMI		R104	1-216-801-11	METAL CHIP	22 5% 1/16W
FL102	1-234-177-21	FILTER, CHIP EMI		R105	1-216-833-11	METAL CHIP	10K 5% 1/16W
FL103	1-234-177-21	FILTER, CHIP EMI (CX860:US,CND)		R108	1-216-864-11	METAL CHIP	0 5% 1/16W
FL104	1-234-177-21	FILTER, CHIP EMI (CX860:AEP,UK/CX870D)		R111	1-216-864-11	METAL CHIP	0 5% 1/16W
FL301	1-234-177-21	FILTER, CHIP EMI					(CX860:AEP,UK/CX870D)
				R112	1-216-864-11	METAL CHIP	0 5% 1/16W
FL302	1-234-177-21	FILTER, CHIP EMI					
FL303	1-234-177-21	FILTER, CHIP EMI		R113	1-216-797-11	METAL CHIP	10 5% 1/16W
FL402	1-234-177-21	FILTER, CHIP EMI		R114	1-216-845-11	METAL CHIP	100K 5% 1/16W
FL404	1-234-177-21	FILTER, CHIP EMI		R115	1-216-864-11	METAL CHIP	0 5% 1/16W
FL405	1-234-177-21	FILTER, CHIP EMI					(CX860:AEP,UK/CX870D)
				R118	1-216-833-11	METAL CHIP	10K 5% 1/16W
FL501	1-234-177-21	FILTER, CHIP EMI		R120	1-216-833-11	METAL CHIP	10K 5% 1/16W
FL502	1-234-177-21	FILTER, CHIP EMI					
FL503	1-234-177-21	FILTER, CHIP EMI		R121	1-216-864-11	METAL CHIP	0 5% 1/16W
FL504	1-234-177-21	FILTER, CHIP EMI		R123	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
FL505	1-234-177-21	FILTER, CHIP EMI		R124	1-216-834-11	METAL CHIP	12K 5% 1/16W
							(CX860:AEP,UK)
FL506	1-234-177-21	FILTER, CHIP EMI		R125	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
FL507	1-233-893-21	FILTER, CHIP EMI		R126	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
FL508	1-234-177-21	FILTER, CHIP EMI					(CX860)
FL601	1-234-177-21	FILTER, CHIP EMI (CX870D)					
FL701	1-234-177-21	FILTER, CHIP EMI (CX870D)		R126	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
							(CX870D)
FL702	1-234-177-21	FILTER, CHIP EMI (CX870D)		R127	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
FL801	1-234-177-21	FILTER, CHIP EMI		R128	1-216-841-11	METAL CHIP	47K 5% 1/16W
							(CX860:AEP,UK)
		< IC >		R129	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
				R130	1-216-833-11	METAL CHIP	10K 5% 1/16W
IC101	8-759-668-01	IC BR9040F-D-E2					
IC102	8-759-693-12	IC MB91108PFV-G-BND		R131	1-216-833-11	METAL CHIP	10K 5% 1/16W
IC103	8-759-427-92	IC PST9126NL		R132	1-216-821-11	METAL CHIP	1K 5% 1/16W
IC104	Note	IC MBM29DL-324BD-90PFTN		R133	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
IC105	8-759-690-68	IC SM8703BV-E2		R136	1-216-833-11	METAL CHIP	10K 5% 1/16W
				R138	1-216-797-11	METAL CHIP	10 5% 1/16W
IC107	8-759-486-55	IC NJM2370U33-TE2 (CX860:AEP,UK/CX870D)		R139	1-216-797-11	METAL CHIP	10 5% 1/16W
IC301	8-759-486-55	IC NJM2370U33-TE2		R140	1-216-797-11	METAL CHIP	10 5% 1/16W
IC302	8-759-666-84	IC CXD9576R		R154	1-216-821-11	METAL CHIP	1K 5% 1/16W
IC303	8-759-643-10	IC GM71V18160CT-6TR		R158	1-216-797-11	METAL CHIP	10 5% 1/16W
IC401	8-759-660-88	IC LA6553-TE-L		R159	1-216-821-11	METAL CHIP	1K 5% 1/16W
IC402	8-759-660-88	IC LA6553-TE-L		R161	1-216-833-11	METAL CHIP	10K 5% 1/16W
IC403	8-759-338-78	IC BA10324AFV-E2		R164	1-216-821-11	METAL CHIP	1K 5% 1/16W
IC404	8-759-660-87	IC CXD9569R		R166	1-216-833-11	METAL CHIP	10K 5% 1/16W
IC502	8-752-399-55	IC CXD1932Q		R167	1-216-833-11	METAL CHIP	10K 5% 1/16W
IC503	8-759-486-55	IC NJM2370U33-TE2		R168	1-216-833-11	METAL CHIP	10K 5% 1/16W
IC504	8-759-573-19	IC MSM56V16160D-10TS-K		R169	1-216-833-11	METAL CHIP	10K 5% 1/16W
IC505	8-759-573-19	IC MSM56V16160D-10TS-K		R170	1-216-833-11	METAL CHIP	10K 5% 1/16W
IC506	8-759-669-28	IC IC PQ1R18		R171	1-216-833-11	METAL CHIP	10K 5% 1/16W
IC601	8-759-663-93	IC CXD9549R (CX870D)		R172	1-216-833-11	METAL CHIP	10K 5% 1/16W
IC701	8-752-402-09	IC CXD1939R (CX870D)		R173	1-216-833-11	METAL CHIP	10K 5% 1/16W

Note : Part No. will be informed later.

Ref. No.	Part No.	Description			Remarks	Ref. No.	Part No.	Description			Remarks
R174	1-216-833-11	METAL CHIP	10K	5%	1/16W	R454	1-216-795-11	RES-CHIP	6.8	5%	1/16W
R175	1-216-833-11	METAL CHIP	10K	5%	1/16W	R458	1-216-833-11	METAL CHIP	10K	5%	1/16W
R176	1-216-833-11	METAL CHIP	10K	5%	1/16W	R459	1-216-833-11	METAL CHIP	10K	5%	1/16W
R184	1-216-801-11	METAL CHIP	22	5%	1/16W	R460	1-216-845-11	METAL CHIP	100K	5%	1/16W
R186	1-216-864-11	METAL CHIP	0	5%	1/16W	R462	1-216-833-11	METAL CHIP	10K	5%	1/16W
R187	1-216-833-11	METAL CHIP	10K	5%	1/16W	R463	1-216-821-11	METAL CHIP	1K	5%	1/16W
R188	1-216-833-11	METAL CHIP	10K	5%	1/16W	R464	1-218-899-11	METAL CHIP	150K	0.5%	1/16W
R195	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R465	1-216-821-11	METAL CHIP	1K	5%	1/16W
R301	1-218-879-11	METAL CHIP	22K	0.5%	1/16W	R466	1-216-821-11	METAL CHIP	1K	5%	1/16W
R302	1-218-831-11	METAL CHIP	220	0.5%	1/16W	R467	1-216-821-11	METAL CHIP	1K	5%	1/16W
R303	1-218-883-11	METAL CHIP	33K	0.5%	1/16W	R468	1-216-821-11	METAL CHIP	1K	5%	1/16W
R304	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R469	1-218-889-11	METAL CHIP	56K	0.5%	1/16W
R305	1-216-838-11	METAL CHIP	27K	5%	1/16W	R470	1-218-850-11	METAL CHIP	1.3K	0.5%	1/16W
R306	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R471	1-218-899-11	METAL CHIP	150K	0.5%	1/16W
R307	1-216-822-11	METAL CHIP	1.2K	5%	1/16W	R472	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R309	1-216-809-11	METAL CHIP	100	5%	1/16W	R473	1-218-850-11	METAL CHIP	1.3K	0.5%	1/16W
R310	1-216-833-11	METAL CHIP	10K	5%	1/16W	R474	1-218-889-11	METAL CHIP	56K	0.5%	1/16W
R311	1-216-845-11	METAL CHIP	100K	5%	1/16W	R476	1-216-813-11	METAL CHIP	220	5%	1/16W
R313	1-218-855-11	METAL CHIP	2.2K	0.5%	1/16W	R477	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R314	1-218-847-11	METAL CHIP	1K	0.5%	1/16W	R478	1-216-836-11	METAL CHIP	18K	5%	1/16W
R315	1-218-871-11	METAL CHIP	10K	0.5%	1/16W	R479	1-216-836-11	METAL CHIP	18K	5%	1/16W
R316	1-218-871-11	METAL CHIP	10K	0.5%	1/16W	R480	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R317	1-216-833-11	METAL CHIP	10K	5%	1/16W	R481	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R318	1-216-833-11	METAL CHIP	10K	5%	1/16W	R482	1-216-803-11	METAL CHIP	33	5%	1/16W
R319	1-218-853-11	METAL CHIP	1.8K	0.5%	1/16W	R483	1-216-834-11	METAL CHIP	12K	5%	1/16W
R320	1-216-833-11	METAL CHIP	10K	5%	1/16W	R484	1-216-834-11	METAL CHIP	12K	5%	1/16W
R321	1-216-813-11	METAL CHIP	220	5%	1/16W	R485	1-216-817-11	METAL CHIP	470	5%	1/16W
R327	1-216-809-11	METAL CHIP	100	5%	1/16W	R486	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R338	1-216-801-11	METAL CHIP	22	5%	1/16W	R487	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R402	1-216-797-11	METAL CHIP	10	5%	1/16W	R488	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R403	1-216-797-11	METAL CHIP	10	5%	1/16W	R489	1-218-847-11	METAL CHIP	1K	0.5%	1/16W
R404	1-216-797-11	METAL CHIP	10	5%	1/16W	R490	1-216-817-11	METAL CHIP	470	5%	1/16W
R405	1-216-797-11	METAL CHIP	10	5%	1/16W	R491	1-216-821-11	METAL CHIP	1K	5%	1/16W
R406	1-216-797-11	METAL CHIP	10	5%	1/16W	R492	1-216-817-11	METAL CHIP	470	5%	1/16W
R408	1-216-795-11	RES-CHIP	6.8	5%	1/16W	R493	1-216-817-11	METAL CHIP	470	5%	1/16W
R409	1-216-797-11	METAL CHIP	10	5%	1/16W	R494	1-216-817-11	METAL CHIP	470	5%	1/16W
R411	1-216-835-11	METAL CHIP	15K	5%	1/16W	R496	1-216-821-11	METAL CHIP	1K	5%	1/16W
R412	1-216-797-11	METAL CHIP	10	5%	1/16W	R497	1-216-821-11	METAL CHIP	1K	5%	1/16W
R415	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R501	1-216-809-11	METAL CHIP	100	5%	1/16W
R416	1-216-844-11	METAL CHIP	82K	5%	1/16W	R502	1-216-833-11	METAL CHIP	10K	5%	1/16W
R417	1-216-843-11	METAL CHIP	68K	5%	1/16W	R503	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R418	1-216-844-11	METAL CHIP	82K	5%	1/16W	R504	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R419	1-216-835-11	METAL CHIP	15K	5%	1/16W	R505	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R420	1-216-835-11	METAL CHIP	15K	5%	1/16W	R506	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R421	1-216-864-11	METAL CHIP	0	5%	1/16W	R507	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R423	1-216-833-11	METAL CHIP	10K	5%	1/16W	R508	1-218-831-11	METAL CHIP	220	0.5%	1/16W
R424	1-216-844-11	METAL CHIP	82K	5%	1/16W	R512	1-216-864-11	METAL CHIP	0	5%	1/16W
R425	1-216-845-11	METAL CHIP	100K	5%	1/16W	R513	1-216-864-11	METAL CHIP	0	5%	1/16W
R426	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R514	1-216-864-11	METAL CHIP	0	5%	1/16W
R427	1-216-835-11	METAL CHIP	15K	5%	1/16W	R515	1-216-864-11	METAL CHIP	0	5%	1/16W
R436	1-216-833-11	METAL CHIP	10K	5%	1/16W	R516	1-216-864-11	METAL CHIP	0	5%	1/16W
R443	1-216-844-11	METAL CHIP	82K	5%	1/16W	R517	1-216-833-11	METAL CHIP	10K	5%	1/16W
R444	1-216-843-11	METAL CHIP	68K	5%	1/16W	R518	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R445	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R523	1-216-864-11	METAL CHIP	0	5%	1/16W
R446	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R524	1-216-864-11	METAL CHIP	0	5%	1/16W
R447	1-216-835-11	METAL CHIP	15K	5%	1/16W	R526	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R448	1-216-835-11	METAL CHIP	15K	5%	1/16W	R527	1-216-864-11	METAL CHIP	0	5%	1/16W
R449	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	R529	1-216-833-11	METAL CHIP	10K	5%	1/16W
R450	1-216-833-11	METAL CHIP	10K	5%	1/16W	R530	1-216-833-11	METAL CHIP	10K	5%	1/16W
R451	1-216-821-11	METAL CHIP	1K	5%	1/16W	R540	1-216-864-11	METAL CHIP	0	5%	1/16W

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
R542	1-216-864-11	METAL CHIP	0 5% 1/16W	R785	1-216-864-11	METAL CHIP	0 5% 1/16W (CX860)
R543	1-216-797-11	METAL CHIP	10 5% 1/16W	R801	1-216-833-11	METAL CHIP	10K 5% 1/16W
R603	1-216-809-11	METAL CHIP	100 5% 1/16W (CX870D)	R802	1-216-838-11	METAL CHIP	27K 5% 1/16W
R605	1-216-864-11	METAL CHIP	0 5% 1/16W (CX870D)	R805	1-216-844-11	METAL CHIP	82K 5% 1/16W
R701	1-216-864-11	METAL CHIP	0 5% 1/16W (CX860)	R806	1-216-844-11	METAL CHIP	82K 5% 1/16W
R710	1-216-864-11	METAL CHIP	0 5% 1/16W (CX870D)	R807	1-216-844-11	METAL CHIP	82K 5% 1/16W
R711	1-216-864-11	METAL CHIP	0 5% 1/16W (CX870D)	R808	1-216-838-11	METAL CHIP	27K 5% 1/16W
R712	1-216-833-11	METAL CHIP	10K 5% 1/16W (CX870D)	R809	1-216-833-11	METAL CHIP	10K 5% 1/16W
R714	1-216-841-11	METAL CHIP	47K 5% 1/16W (CX870D)	R812	1-216-864-11	METAL CHIP	0 5% 1/16W
R715	1-216-841-11	METAL CHIP	47K 5% 1/16W (CX870D)	R826	1-216-809-11	METAL CHIP	100 5% 1/16W
R719	1-216-841-11	METAL CHIP	47K 5% 1/16W (CX870D)	R827	1-216-844-11	METAL CHIP	82K 5% 1/16W
R720	1-216-841-11	METAL CHIP	47K 5% 1/16W (CX870D)	R834	1-216-833-11	METAL CHIP	10K 5% 1/16W
R721	1-216-841-11	METAL CHIP	47K 5% 1/16W (CX870D)	R835	1-216-830-11	METAL CHIP	5.6K 5% 1/16W
R722	1-216-841-11	METAL CHIP	47K 5% 1/16W (CX870D)	R837	1-216-813-11	METAL CHIP	220 5% 1/16W
R723	1-216-809-11	METAL CHIP	100 5% 1/16W (CX870D)	R838	1-216-813-11	METAL CHIP	220 5% 1/16W
R724	1-216-841-11	METAL CHIP	47K 5% 1/16W (CX870D)	R839	1-216-813-11	METAL CHIP	220 5% 1/16W
R725	1-216-841-11	METAL CHIP	47K 5% 1/16W (CX870D)	R840	1-216-864-11	METAL CHIP	0 5% 1/16W
R727	1-216-841-11	METAL CHIP	47K 5% 1/16W (CX870D)	R841	1-216-864-11	METAL CHIP	0 5% 1/16W
R728	1-216-841-11	METAL CHIP	47K 5% 1/16W (CX870D)	< COMPOSITION CIRCUIT BLOCK >			
R729	1-216-841-11	METAL CHIP	47K 5% 1/16W (CX870D)	* RB101	1-233-270-11	NETWORK, RES (8 GANG) 10K	
R731	1-216-864-11	METAL CHIP	0 5% 1/16W (CX870D)	* RB102	1-233-270-11	NETWORK, RES (8 GANG) 10K	
R733	1-216-841-11	METAL CHIP	47K 5% 1/16W (CX870D)	< VARIABLE RESISTOR >			
R750	1-216-864-11	METAL CHIP	0 5% 1/16W (CX860)	RV501	1-223-583-11	RES, ADJ, CARBON 1K	
R751	1-216-864-11	METAL CHIP	0 5% 1/16W (CX860)	< VIBRATOR >			
R752	1-216-864-11	METAL CHIP	0 5% 1/16W (CX860)	X101	1-781-185-21	VIBRATOR, CERAMIC (12.5MHz)	
R753	1-216-864-11	METAL CHIP	0 5% 1/16W (CX860)	X102	1-781-950-11	VIBRATOR, CRYSTAL (27MHz)	
R754	1-216-864-11	METAL CHIP	0 5% 1/16W (CX860)				
R755	1-216-864-11	METAL CHIP	0 5% 1/16W (CX860)	* ⚠	1-468-512-11	POWER BLOCK (MPW1241)	
R760	1-216-864-11	METAL CHIP	0 5% 1/16W			(CX860:US,CND/CX870D)	
R761	1-216-864-11	METAL CHIP	0 5% 1/16W	* ⚠	1-468-512-21	POWER BLOCK (MPW1141) (CX860:AEP,UK)	
R762	1-216-864-11	METAL CHIP	0 5% 1/16W			*****	
R771	1-216-864-11	METAL CHIP	0 5% 1/16W			(Ref.No.:6000Series)	
R772	1-216-864-11	METAL CHIP	0 5% 1/16W (CX870D)	< CAPACITOR >			
R774	1-216-864-11	METAL CHIP	0 5% 1/16W	C5	9-885-007-96	ELECT	150u 200V
R781	1-216-864-11	METAL CHIP	0 5% 1/16W (CX870D)				(CX860:US,CND/CX870D)
				C5	9-885-007-98	ELECT	68u 400V
							(CX860:AEP,UK)
				C101	9-885-006-67	ELECT	330uF 35V
				C111	9-885-006-66	ELECT	33uF 35V
				C301	9-885-006-65	ELECT	680uF 25V
				C306	9-885-006-66	ELECT	33uF 35V
				C307	9-885-006-66	ELECT	33uF 35V
				C401	9-885-006-67	ELECT	330uF 35V
				< DIODE >			
				D4	8-719-901-33	DIODE	1SS133
				D5	8-719-063-16	DIODE	HZS9B2
				D6	8-719-901-33	DIODE	1SS133
				D7	8-719-901-33	DIODE	1SS133
				D11	8-719-054-32	DIODE	ERA15-06

Note :

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Note :

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remarks
D12	8-719-054-32	DIODE ERA15-06	
D13	8-719-054-32	DIODE ERA15-06	
D14	8-719-054-32	DIODE ERA15-06	
D21	8-719-901-33	DIODE 1SS133	
D22	8-719-901-33	DIODE 1SS133	
D101	8-719-210-51	DIODE 21DQ10	
D102	8-719-063-04	DIODE HZS7A2	
D103	9-885-006-59	DIODE HZ18CP	
D104	8-719-901-33	DIODE 1SS133	
D110	8-719-901-33	DIODE 1SS133	
D205	8-719-901-33	DIODE 1SS133	
D301	9-885-006-58	DIODE ERB83-006	
D302	9-885-006-58	DIODE ERB83-006	
D401	8-719-210-51	DIODE 21DQ10	
D402	8-719-063-04	DIODE HZS7A2	
D404	8-719-901-33	DIODE 1SS133	
D410	8-719-901-33	DIODE 1SS133	
< FUSE >			
△ F1	1-533-418-11	FUSE (2.5A/125V) (CX860:US,CND/CX870D)	
△ F1	1-576-229-11	FUSE (2.5A/250V) (CX860:AEP,UK)	
< IC >			
IC302	8-759-234-89	IC TA76431S	
IC303	8-759-651-05	IC TA76431AS	
< IC LINK >			
△ P301	1-533-593-11	IC LINK 2A 60V	
△ P302	1-533-592-11	IC LINK 1.6A 60V	
< PHOTO COUPLER >			
△ PC1	9-885-006-57	PHOTO COUPLER PC817 (CX860:US,CND/CX870D)	
△ PC1	9-885-006-70	PHOTO COUPLER PC123 (CX860:AEP,UK)	
< TRANSISTOR >			
Q1	9-885-006-63	TRANSISTOR 2SK2638 (CX860:US,CND/CX870D)	
Q1	9-885-006-72	TRANSISTOR 2SK2717 (CX860:AEP,UK)	
Q2	9-885-006-61	TRANSISTOR 2SC1741AS	
Q101	9-885-006-60	TRANSISTOR 2SB1642	
Q102	8-729-920-70	TRANSISTOR 2SC1740S	
Q103	8-729-920-70	TRANSISTOR 2SC1740S	
Q104	8-729-920-68	TRANSISTOR 2SA933S	
Q201	9-885-006-62	TRANSISTOR 2SJ525	
Q301	9-885-006-60	TRANSISTOR 2SB1134	
Q302	8-729-920-70	TRANSISTOR 2SC1740S	
Q303	8-729-920-70	TRANSISTOR 2SC1740S	
Q304	8-729-920-68	TRANSISTOR 2SA933S	
Q401	8-729-030-18	TRANSISTOR 2SD2525	
Q402	8-729-920-68	TRANSISTOR 2SA933S	
Q403	8-729-920-68	TRANSISTOR 2SA933S	
Q404	8-729-920-70	TRANSISTOR 2SC1740S	
< TRANSFORMER >			
△ T1	9-885-006-68	TRANSFORMER 2D15 (CX860:US,CND/CX870D)	
△ T1	9-885-007-99	TRANSFORMER 2D26 (CX860:AEP,UK)	

Ref. No.	Part No.	Description	Remarks
< SWITCH >			
△ SW1	9-885-006-69	SWITCH (① POWER)	
* A-6065-609-A SW-345 BOARD, COMPLETE ***** (Ref.No.;1000Series)			
< CONNECTOR >			
CN301	1-794-786-11	CONNECTOR, FFC/FPC 3P	
< SWITCH >			
S301	1-771-349-21	SWITCH, KEYBOARD (EJECT)	
* A-6065-632-A TK-59 BOARD, COMPLETE ***** (Ref.No.;1000Series)			
< CAPACITOR >			
C004	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C005	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C006	1-124-779-00	ELECT CHIP 10uF 20% 16V	
C007	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C008	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C009	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
C010	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C011	1-162-919-11	CERAMIC CHIP 22PF 5% 50V	
C012	1-124-779-00	ELECT CHIP 10uF 20% 16V	
C013	1-162-919-11	CERAMIC CHIP 22PF 5% 50V	
C014	1-162-919-11	CERAMIC CHIP 22PF 5% 50V	
C015	1-162-919-11	CERAMIC CHIP 22PF 5% 50V	
C016	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C017	1-164-172-11	CERAMIC CHIP 0.0056uF 10% 25V	
C018	1-164-739-11	CERAMIC CHIP 560PF 5% 50V	
C019	1-164-172-11	CERAMIC CHIP 0.0056uF 10% 25V	
C020	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C021	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C022	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C023	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	
C024	1-164-730-11	CERAMIC CHIP 0.0012uF 10% 50V	
C025	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	
C026	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	
C027	1-164-217-11	CERAMIC CHIP 150PF 5% 50V	
C028	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C029	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C030	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C031	1-124-779-00	ELECT CHIP 10uF 20% 16V	
C032	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C033	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C034	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C035	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C036	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	
C037	1-164-739-11	CERAMIC CHIP 560PF 5% 50V	
C038	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	

Note :

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Note :

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TK-59

TM-128

TS-151

Ref. No.	Part No.	Description	Remarks		
C039	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C040	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C041	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
< CONNECTOR >					
CN001	1-785-700-21	CONNECTOR, FPC (ZIF) 23P			
CN002	1-566-529-11	CONNECTOR, FPC (ZIF) 13P			
CN003	1-794-789-21	CONNECTOR, FFC/FPC 20P			
CN004	1-794-788-21	CONNECTOR, FFC/FPC 16P			
< DIODE >					
D003	8-719-988-61	DIODE 1SS355TE-17			
< IC >					
IC001	8-759-567-24	IC SSI33P3722			
< COIL >					
L001	1-412-031-11	INDUCTOR CHIP	47uH		
< TRANSISTOR >					
Q001	8-729-903-46	TRANSISTOR	2SB1132-P		
Q002	8-729-402-42	TRANSISTOR	UN5213		
< RESISTOR >					
R001	1-216-815-11	METAL CHIP	330	5%	1/16W
R002	1-216-809-11	METAL CHIP	100	5%	1/16W
R003	1-216-809-11	METAL CHIP	100	5%	1/16W
R004	1-216-837-11	METAL CHIP	22K	5%	1/16W
R005	1-216-013-00	METAL CHIP	33	5%	1/10W
R006	1-216-013-00	METAL CHIP	33	5%	1/10W
R007	1-216-841-11	METAL CHIP	47K	5%	1/16W
R008	1-216-797-11	METAL CHIP	10	5%	1/16W
R009	1-216-834-11	METAL CHIP	12K	5%	1/16W
R015	1-216-833-11	METAL CHIP	10K	5%	1/16W
R016	1-216-833-11	METAL CHIP	10K	5%	1/16W
R017	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R018	1-216-833-11	METAL CHIP	10K	5%	1/16W
R022	1-216-811-11	METAL CHIP	150	5%	1/16W
R023	1-216-820-11	METAL CHIP	820	5%	1/16W
R024	1-216-821-11	METAL CHIP	1K	5%	1/16W
R025	1-216-813-11	METAL CHIP	220	5%	1/16W
R029	1-216-861-11	METAL CHIP	2.2M	5%	1/16W

TM-128 BOARD, COMPLETE

(Ref.No.:1000Series)

< CAPACITOR >

C131	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C132	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V

< CONNECTOR >

* CN131 1-564-013-11 PIN, CONNECTOR 3P

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>		
TS-151 BOARD, COMPLETE					

(Ref.No.:5000Series)					
< CONNECTOR >					
CN101	1-794-834-11	CONNECTOR, FFC/FPC 11P			
CN102	1-569-333-11	CONNECTOR, BOARD TO BOARD 3P			
CN103	1-794-787-11	CONNECTOR, FFC/FPC 6P			
< JUMPER RESISTOR >					
JR191	1-216-296-91	SHORT	0		
JR192	1-216-296-91	SHORT	0		
JR193	1-216-296-91	SHORT	0		
JR194	1-216-296-91	SHORT	0		
< PHOTO INTERRUPTER >					
PH101	8-749-017-89	IC SPI-237			
< TRANSISTOR >					
Q101	8-729-026-49	TRANSISTOR	2SA1037AK-T146-R		
Q102	8-729-026-49	TRANSISTOR	2SA1037AK-T146-R		
< RESISTOR >					
R101	1-216-043-91	RES-CHIP	560	5%	1/10W
R104	1-216-089-11	RES-CHIP	47K	5%	1/10W
R105	1-216-089-11	RES-CHIP	47K	5%	1/10W

MISCELLANEOUS

△ 3	1-468-512-11	POWERBLOCK (MPW1241) (CX860:US,CND/CX870D)
△ 3	1-468-512-21	POWERBLOCK (MPW1141) (CX860:AEP,UK)
4	1-500-386-11	FILTER, CLAMP (FERRITE CORE)
△ 7	1-782-960-11	CORD,POWER (CX860:AEP,UK)
△ 7	1-783-531-31	CORD,POWER (CX860:US,CND)
△ 7	1-757-281-11	CORD,POWER (CX870D)
8	1-757-222-11	CABLE, FLAT (FAC-011)
12	1-757-225-11	CABLE, FLAT (FAM-007)
18	1-757-236-11	CABLE, FLAT (FAE-003)(CX860:AEP,UK)
19	1-757-235-11	CABLE, FLAT (FAE-002)(CX860:AEP,UK)
20	1-476-249-61	REMOTE COMMANDER (RMT-D123A) (CX860:US,CND)
20	1-476-249-71	REMOTE COMMANDER (RMT-D123P) (CX860:AEP,UK)
20	1-476-249-81	REMOTE COMMANDER (RMT-D124A)(CX870D)
58	1-757-234-11	CABLE, FLAT (FDD-003)
64	1-757-224-11	CABLE, FLAT (FAF-004)
66	1-757-231-11	CABLE, FLAT (FLS-003)
69	1-476-273-11	ENCODER, ROTARY
71	1-757-230-11	CABLE, FLAT (FLR-003)
74	1-757-232-11	CABLE, FLAT (FTD-001)
104	1-757-229-11	CABLE, FLAT (FTC-003)
110	1-757-223-11	CABLE, FLAT (FAK-001)
111	1-757-228-11	CABLE, FLAT (FMC-014)
154	1-757-226-11	CABLE, FLAT (FMK-005)
155	1-757-227-11	CABLE, FLAT (FMK-006)
162	1-757-233-11	CABLE, FLAT (FLC-002)

Note :

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Note :

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<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>
M131	1-541-632-11	MOTOR, DC	
ND101	1-517-834-21	FLUORESCENT INDICATOR TUBE	

ACCESSORIES

1-476-249-61	REMOTE COMMANDER (RMT-D123A)	(CX860:US,CND)
1-476-249-71	REMOTE COMMANDER (RMT-D123P)	(CX860:AEP,UK)
1-476-249-81	REMOTE COMMANDER (RMT-D124A)	(CX870D)
1-575-334-41	CORD,CONNECTION (CX870D)	
1-575-335-21	CORD,CONNECTION (S-VIDEO CABLE 1.5m)	(CX860)
1-751-271-12	CORD,CONNECTION (CX860:AEP,UK)	
1-757-411-11	CORD,CONNECTION (CX860)	
1-775-454-21	CORD,CONNECTION (CX870D)	
1-776-078-31	CORD,CONNECTION (CX870D)	
1-777-360-21	CORD,CONNECTION (COAXIAL 1.5m)	(CX860)
1-790-938-11	CORD,CONNECTION (1.5m) (CX860:US,CND)	
3-064-299-11	MANUAL, INSTRUCTION (ENGLISH)	(CX860:US,CND)
3-064-299-21	MANUAL, INSTRUCTION (FRENCH)	(CX860:US,CND)
3-064-299-31	MANUAL, INSTRUCTION (ENGLISH)	(CX860:AEP,UK)
3-064-299-41	MANUAL, INSTRUCTION (FRENCH)	(CX860:AEP)
3-064-299-51	MANUAL, INSTRUCTION (GERMAN)	(CX860:AEP)
3-064-299-61	MANUAL, INSTRUCTION (ITALIAN)	(CX860:AEP)
3-064-299-71	MANUAL, INSTRUCTION (DUTCH)	(CX860:AEP)
3-064-299-81	MANUAL, INSTRUCTION (SPANISH)	(CX860:AEP)
3-064-300-11	MANUAL, INSTRUCTION (ENGLISH)	(CX870D)
3-064-300-21	MANUAL, INSTRUCTION (FRENCH)	(CX870D)
3-709-493-11	COVER, BATTERY	

HARDWARE LIST

#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3
#2	7-628-253-90	SCREW +PS 2.6X4

